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THE  
**LADIES' FLOWER-GARDEN.**

---

*Perennials.*

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Cultivated ~~double-flowered~~ *Anemone coronaria*





THE  
LADIES' FLOWER-GARDEN

OF

ORNAMENTAL PERENNIALS.

BY MRS. LOUDON.

IN TWO VOLUMES.

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## INTRODUCTION.

THE plants I propose to treat of in the present work are principally those which remain several years in the ground without requiring to be taken up and replanted; flowering every summer, and generally dying down to the ground in winter, but when they do so, springing up again from the root in spring. These plants are seldom raised from seed, and when they are, they do not flower till the second or third year; but they are generally propagated by dividing the roots either in autumn, when the plants have done flowering and are in a state of repose, or in spring, just before the young shoots begin to grow. The latter is the most general period.

When a Perennial plant is increased by division, it is not necessary to take up the whole plant, but a portion of it may be divided by the spade; or the earth may be cleared away from the roots on one side, and a portion separated from the principal mass with a gardener's knife. The principal points to be attended to in both cases are—to have several buds attached to the portion of the root which is removed; to divide the part taken away from that which remains by a clean cut, so as not to leave a bruised or ragged portion of either stem or root; and to take up the whole of the fibrous roots of the part removed, to their full extent, as the spongioles, through which alone the plant can take up food, are at the extreme point of the fibrous roots, and if they are broken off, the plant will suffer considerably, from its being forced to exist without food till it can form new ones. If, on the contrary, the portion removed be taken up carefully, with all its roots and their spongioles uninjured, and planted in a suitable soil, it will grow rapidly; and its flowering will not be at all checked by its removal.

Besides the fibrous-rooted Perennials, I shall include in the present work the Biennials; that is, plants which do not flower till the second year after sowing, and which last for a few years afterwards,

but not so long as the proper Perennials. The wallflowers and the hollyhocks may be given as familiar examples of this class of plants. I shall also include the tuberous-rooted perennials; such as the Anemones and the Dahlias; and, in short, all the herbaceous flowering plants commonly found in gardens, which have not been already described in my previous works on the Annuals and the Bulbs.

The botanical arrangement of this work will be found to be a little different from that of the Annuals; as in that work I adopted Dr. Lindley's arrangement of the Natural System, whereas in the present one I have followed the late Professor De Candolle. I have done this, because, since my former work was published, the University of London, and the Apothecaries' Company, have decided that young men studying botany, with a view to the medical profession, shall be examined according to De Candolle's system; and this circumstance appears so completely to have given it the ascendancy over all the other systems, that even Dr. Lindley's own works on Elementary Botany that have been published lately, have been written in accordance to it.

I have now only to add, that in all other respects this work will exactly resemble its predecessors, and I trust that it will be honoured with an equal share of public favour.

J. W. L.

BAYSWATER,  
*December 1st, 1841.*

THE  
LADIES' FLOWER-GARDEN  
OR  
ORNAMENTAL PERENNIALS.

CHAPTER I.

RANUNCULACEÆ. *Dec.*

**E**SSENTIAL CHARACTER.—Sepals usually five, but sometimes varying from three to six. Petals frequently wanting or confounded with the sepals, when present, frequently unequal or assuming unusual shapes. Stamens numerous, growing from beneath the pistil. Carpels num-

rous, growing close together on an elevated receptacle or torus. Plant generally either a caryopsis, or follicular. Leaves alternate or opposite, generally much branched, with the petiole dilated so as to form a kind of sheath round the stem.

**D**ESCRIPTION, &c.—The plants comprised in this order, vary exceedingly in the form of their flowers; and in some of them the petals and sepals assume even grotesque shapes, as though Nature, tired of the commonplace routine of their ordinary forms, had tried how many new figures they might be compelled to assume. Amid all this irregularity, there is, however, always a certain degree of resemblance, which enables the experienced eye of a botanist to recognise the plants belonging to this order. They have all numerous stamens, which have always two-celled anthers, with the filament firmly affixed to their back; and the filaments, sepals, and petals (when there are any), all grow out of the receptacle from beneath the carpels. The carpels themselves are generally numerous, and though growing close together, are either not attached at all to each other, or so slightly, as to be easily separated with a pin. In many of the genera each carpel contains only one seed, which it does not open to discharge, so that what is commonly called the seed is, in fact, the dry carpel, with the seed enclosed. A seed and carpel of this kind form what is called a caryopsis; and it has been observed that seeds of this description are longer in the ground before they germinate than others, no doubt because the germ of the young plant has two coverings to break through, instead of one. Many of the caryopsides are furnished with feathery tails, as in the Clematis and Pulsatilla, the use of which is to distribute the seeds. The juice of all the Ranunculaceæ, when the plants are bruised or broken, is watery and very aerid, and they are all more or less poisonous. The leaves are generally more or less cut, and the petioles or footstalks are generally dilated at the base so as to enfold the stem. This is, indeed, so frequently the case, that when a plant is found to have this peculiarity, combined with numerous stamens growing round and from beneath a little heap of carpels in the centre of the flower, the student in botany may be certain that the plant belongs to the Ranunculaceæ. There are, however, many plants belonging to the order which have neither cut leaves nor dilated petioles. The order takes its name from the genus *Ranunculus*.

## GENUS I.

CLEMATIS, *Lin.* THE CLEMATIS, OR VIRGIN'S BOWER.

*Lan. Syst.* POLYANDRIA POLYGYNIA.

**GENERIC CHARACTER.**—Petals wanting. Calyx of from four to eight-coloured, petal-like sepals. Carpels caryopsides, and terminated by a long tail, which is generally feathery. Leaves opposite, generally deeply cut. Roots fibrous.

**DESCRIPTION, &c.**—The flowers of the plants belonging to this genus are so well known, that it does not seem necessary to give any detailed account of them. Some of my readers will, however, probably be surprised to find that botanists do not allow them any petals, and that their showy white or purple flowers are considered to be all calyx. There are very few herbaceous species in the genus, and these are all upright bushes, and not climbers; while all the woody kinds are climbing shrubs. The name of Clematis alludes to the habit of growth of these species, as it signifies a little vine.

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1.—CLEMATIS INTEGRIFOLIA, *Lin.* THE HUNGARIAN CLIMBER' OR ENTIRE-LEAVED CLEMATIS.

**ENGRAVINGS.**—Bot. Mag. t. 65, and our fig. 3, in Plate 1.

ding, leaves entire, ovate, lanceolate, smooth. Leaves undivided.

**SPECIFIC CHARACTER.**—Peduncles usually 1-flowered, flowers nod-

ding. Stem erect.

**DESCRIPTION, &c.**—This species is very improperly termed a climber, as it has erect stems, and forms a kind of bush. The peduncles of the flower are very long, and the sepals are purple, of a leathery texture, with an undulated margin. The buds are somewhat balloon-shaped, and as the margins of the sepals are fringed with whitish hairs when young, the bud appears to be ornamented with white stripes. The leaves are also ornamented with a hairy margin, and they are entire, contrary to those of all the shrubby species, the leaves of which are very much cut. The anthers are yellow, and very long, the stamens forming a kind of pitcher-shaped centre to the flower. This species is a native of Hungary, and some parts of Germany, and it is quite hardy in British gardens. When once planted, it requires no farther attention, except occasionally taking up the plant and dividing the roots if the tuft which it makes appear likely to spread too far. When in flower, it is very ornamental, from the great number of purple flowers, each with a bright yellow centre, which arise on their long peduncles all over the bush, in the months of June and July. The flowers have no fragrance. It was introduced before 1594, and it has been ever since that period a common plant in British gardens. Among its other advantages is that of its being able to bear the smoke of London without injury; it will also flower freely in very confined situations, and even under the drip of trees. There are two varieties; one with very long leaves, and the other with the flowers almost erect.

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OTHER SPECIES OF HERBACEOUS CLEMATIS.

C. OCHROLEUCA, *Art.*; *Lodd. Bot. Cab.* t. 661.

The flowers of this species are cream-coloured, and nearly erect; and bell-shaped, the sepals being curled back at the tip. The stamens are of a greenish white. The leaves are entire, and the younger ones somewhat silky. The peduncle of the flower is much shorter than in the preceding species, and the whole plant is much lower.









It is a native of North America, where it is generally found on the banks of rivers. It was introduced in 1767. It is hardy in British gardens, but is very seldom seen, as it does not ripen seeds in this country, and it is generally killed by any attempt to divide the root. The flowers are without fragrance.

C. ERECTA, *An.*

This species has white, sweet-scented flowers, and pinnate leaves. The flowers are produced in dense corymbs, and the plant grows two or three feet high. There are several varieties, which do not, however, differ greatly from the species. This species is sometimes called the Spanish Virgin's Bower, and it is found wild in Spain, and throughout the south of Europe. It was introduced before 1597, but it is seldom seen in British gardens. It flowers from June till August.

C. MARITIMA, *Lin.*

This species differs from the preceding one, chiefly in the corymbs of flowers being loose instead of dense. It is a native of the south of Europe, where it is generally found on the sea-coast.

C. ANGUSTIFOLIA, *Jacq.*; *Wat. Dicd. Brit.* t. 112;

has white flowers, with very blunt sepals. The leaves are pinnate, and the leaflets lanceolate. It is a native of Siberia, and was introduced in 1787.

There are two or three other species which may be called herbaceous when young, but they most of them take a half shrubby character with time.

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GENUS II.

THALICTRUM, *Lin.* THE MEADOW RUE, OR FEATHERY COLUMBINE.

— — — — —  
*Lin. Syst. POLYANDRIA POLYGYNIA*

GENERIC CHARACTER.—Involucels none	Calyx of four or five dc	terminated by a point.	Seeds pendulous	Stems never climbing
cious sepals.		Carpels 1 seeded, indeluscent,		Leaves alternate.

DESCRIPTION, &c.—The flowers of plants of this genus have no petals; and, though they have a calyx of four or five petal-like sepals, it is generally so small and inconspicuous, and falls so soon, that the flowers appear to be all stamens. The carpels are caryopsides, terminating in a point; the roots are perennial, but the stems die down to the ground every winter. The roots have an unpleasant smell, and resemble those of rhubarb, both in appearance and qualities. The British species are called Meadow Rue, from their leaves having the taste of rue; but their flowers can hardly be called ornamental. Only two or three species are cultivated in British gardens. The name of *Thalictrum* is derived from a Greek word, to grow green, from the bright green of the young shoots; or from two Greek words, signifying the "cradle of affluence," from the abundance of its flowers.

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1.—THALICTRUM AQUILEGIFOLIUM, *Lin.* THE FEATHERY COLUMBINE.

ENGRAVINGS.—Bot. Mag. t. 1818, and our fig 2, in Plate 1

VARIETIES.—T. A. 2, atropurpureum, *Murr.* A native of Austria. The stems and stamens are all of a very dark purple.

T. A. 3, formosum, *Dec.*, *Bot. Mag.* t. 2025. The filaments are dark purple, and the anthers yellow.

T. A. 4, album, *G. Don.* Stems green Stamens white

SPECIFIC CHARACTER.—Flowers in corymbose panicles Sepals received, much shorter than the stamens. Caryopsides stalked Leaves tri-pinnate. Roots fibrous.

DESCRIPTION, &c.—This species is very ornamental, from the feathery brightness of its flowers, the stamens of which are only conspicuous. The sepals are of the same colour as the stamens; but they are so small, and so much

turned back, as to be very little seen. The flowers are disposed in corymbose panicles, with little stipules at the base of each fork of the panicle. The stem is hollow, and generally of a dark purple colour, covered with a kind of mealy bloom. The leaves are tri-pinnate or tri-ternate. The caryopsides are three-sided, with wings on the angles; and they hang, when nearly ripe, on rather long foot-stalks. The species is a native of Germany, and other parts of central Europe, where it is found generally on woody hills. It was introduced in 1731. It is quite hardy in British gardens; but the stems die down to the ground every winter, and should be cut off. The plant is propagated by seeds, or by dividing the root in spring. It should be planted in a dry, but somewhat shaded situation, and it grows from one foot to three feet high, flowering from May to July. The feathery Columbine was known to the Greeks and Romans, and dedicated to Bacchus; and it was thought lucky to lay a newly-born child on a pillow stuffed with its flowers, as it was supposed to ensure richness to the child through life.

### 2.—*THALICTRUM FLAVUM*, *Smith.* THE COMMON MEADOW RUE.

ENGRAVINGS.—Eng. Bot. t. 367; 2nd edit. t. 775.

SPECIFIC CHARACTER.—Stem erect, branched, furrowed, leafy. | Leaves bi-pinnate; leaflets broadly ovate, or wedge-shaped, trifid.

Panicle compact, sub-corymbose. Flowers erect. (*Smith.*)

DESCRIPTION, &c.—The common Meadow Rue has an upright, compact panicle of yellow flowers; and deeply-cut leaflets. It is a native of Britain, and grows two or three feet high in osier-beds or wet meadows, or on the banks of rivers or ditches. It flowers in June and July. The stem is hollow and furrowed; and the root, which is fibrous, is sometimes used to dye wool yellow. The whole plant is extremely acrid, and the country people use the bruised leaves as a blister. This species is seldom grown in gardens, though it is certainly ornamental.

### 3.—*THALICTRUM ANEMONOIDES*, *Mich.* THE ANEMONE-LIKE THALICTRUM.

SYNONYME.—*Anemone thalictroides*, *Lin.*

ENGRAVINGS.—Bot. Mag. t. 366; Syst. Brit. Flav. Gard., 2d ser. t. 150; Lodd. Bot. Cab. t. 770. | SPECIFIC CHARACTER.—Flowers produced in umbels. Sepals longer than the stamens. Leaves bi-ternate, leaflets roundish; floral leaves resembling an involucre. Roots tuberous.

DESCRIPTION, &c.—This species is a very puzzling one. Its flowers, particularly when double, are very much like those of the wood anemone, and the whole appearance of the plant resembles that of the flowers belonging to that genus. There are generally eight sepals, which are white, and much longer than the stamens, and which are roundish and somewhat concave. The leaves are small, but in shape they resemble those of the Columbine; and two or three of them are united at a little distance below the flower, so as to form a kind of involucre, just as is the case with the anemones. The roots are also tuberous. It is true that this plant differs from the anemones in its sepals falling off very soon after their expansion, leaning on the stamens, which in their naked state make the flowers look very like those of the meadow rues. The carpels are also completely those of the genus *Thalictrum*. The species is a native of the whole of North America, as it is found in every part of that country, from Virginia to Canada. It was introduced into England in 1768; and, as it is quite hardy and flowers abundantly, it is a very useful border plant in British gardens. It is also very useful for filling a bed in a geometrical flower-garden, from its dwarf stature, which seldom exceeds six inches, and its compact habit of growth.

## OF ORNAMENTAL PERENNIALS

### OTHER SPECIES OF THALICTRUM.

#### T. CLAVATUM, Dec.

The seed-vessels are inflated, and spread out like a star. It is a native of North America, where it is found on sand-hills, near Hudson's Bay. It was introduced in 1820.

#### T. CORNUTI, Lin. ; T. REVOLUTUM, Dec. T. CANADENSIS, Cornuti.

A native of North America, introduced in 1806. The flowers are white, or pale purple; and the leaflets are glaucous beneath, and somewhat revolute at the edges.

#### T. ALPINUM, Lin. Bot. Mag. t. 2237, Flug. Bot. t. 262, 2nd edit. t. 772

A very pretty little plant, with an upright stem, and delicate, feathery, nodding flowers. The leaves are very small and roundish, like those of the Columbine. It is a native of hilly places through all the north of Europe, and it has also been found wild on the mountains of Scotland and Wales. It is quite hardy, and very suitable for rock-work.

#### T. PETALOIDEUM, Lin.

The sepals of this species are white, and longer than the stamens; and, though they soon fall, the filaments of the stamens are so much dilated as to look like little flesh-coloured petals with a yellow ball (the anther), at the tip of each. The seed-vessels are striped, and they have no foot-stalks. The species is a native of the north of Asia, and it was introduced in 1799. There are many other species of *Thalictrum*, but they are seldom seen in British gardens.

## GENUS III.

### HEPATICA, Dec. THE HEPATICA OR LIVERWORT.

#### Lin. Syst. POLYANDRIA POLYGYNIA

GENERIC CHARACTER.—Involucres of three entire leaves in the form of a calyx close to the flower. Petals wanting in the single flowers. Calyx of six to nine petal-like coloured sepals disposed in two or three series. Stamens and ovaries numerous. Cupels tailless. Leaves evergreen, three or five lobed

DESCRIPTION, &c.—The European Hepaticas are so well known in every garden, that I need only remind my readers that they are dwarf evergreen plants with three-lobed leaves, and very pretty flowers, which are either bright blue, bright pink, or white, but never yellow. Like the Clematis, the single Hepaticas have no petals, the coloured part of the flower being only a calyx, while that part which looks like a calyx is the involucrum; it being separated from the flower by a small portion of the stem, which is never the case with the true calyx. The American Hepaticas are probably only varieties of *H. triloba*. The name of Hepatica signifies belonging to the liver, and the English name of the plant is Liverwort, but why these are applied seems doubtful.

1.—HEPATICA TRILOBA, *Chois.* THE COMMON HEPATICA.

**SYNONYMS.**—*Anemone Hepatica*, *Lin.*; *A. precox*, *Sal.*

**ENGRAVINGS.**—Bot. Mag. t. 10; Eng. Bot. t. 51; and our *fig. 4*, in Plate 1.

**VARIETIES.**—The species is the single blue, but the varieties are the

double blue, the single and double pink, and the single and double white.

**SPECIFIC CHARACTER.**—Leaves cordate, three-lobed; lobes quite entire, ovate, acutish; petioles and scapes rather hairy. (*G. Don.*)

**DESCRIPTION, &c.**—The flower of the Hepatica is shrouded in the bud by its involucrum, which consists of three entire leaves. The sepals are of the same colour in the bud as when expanded. The single flowers have numerous stamens and carpels, but in the double flowers these are all changed into petals. The leaves are of a thick leathery texture and a deep green colour. The flowers are numerous, but each is on a separate flower-stem, or scape, rising from the root. The species is a native of various parts of Europe; and it has sometimes, though very rarely, been found wild in England, though probably the apparently wild specimens have been accidentally thrown out of some garden. The plant should be planted in light soil, the best being peat or sandy loam; and as it has a tendency to push itself out of the ground, so as partially to lay bare its roots, the earth should be occasionally drawn up round it, or it should be taken up and replanted about every third or fourth year in autumn; as it should not be removed after the young shoots have begun to grow, and the flowers to expand, which they do as soon as the snow is off the ground in spring. All the varieties may be kept in pots, and they are all very suitable for rock-work.

2.—HEPATICA AMERICANA, *Ker.* THE AMERICAN HEPATICA.

**SYNONYME.**—*H. t. var. Pursh.*

**VARIETY.**—*H. A. 2 acutiloba*; *H. acutiloba*, *Dec.*

**ENGRAVINGS.**—Bot. Reg. t. 387; and our *fig. 5*, in Plate 1.

**SPECIFIC CHARACTER.**—Leaves cordate, three-lobed, lobes quite

entire, roundish obtuse; petioles and scapes very hairy. (*G. Don.*)

**DESCRIPTION, &c.**—This is probably only a variety of *H. triloba*, though the sepals are rounder at the point and narrower than in that species. They are also somewhat darker at the margin than in the centre. This plant is very abundant in Canada in rocky situations, but it does not succeed well in British gardens, particularly near a town, though it does best on rock-work. This species is found to vary considerably in the leaves, which are sometimes found with five lobes, and sometimes with the lobes pointed. It was introduced in 1800.

## GENUS IV.

HYDRASTIS, *Lin.* YELLOW-ROOT.*Lin. Syst. POLYANDRIA POLYGYNIA.*

**GENERIC CHARACTER.**—Calyx of three ovate sepals. Petals wanting. Stamens and ovaries numerous. Fruit baccate, numerous, collected into a head, each terminated by the style, 1-celled, 1—2-seeded. Seeds somewhat egg-shaped, smooth. Roots tuberous and yielding a yellow dye. Leaves 3 or 5-lobed. (*G. Don.*)

**DESCRIPTION, &c.**—There is only one species of this genus. The name of Hydrastis is derived from the Greek word for water; because the plant will only live in moist situations.

1.—*HYDRASTIS CANADENSIS*, *Linn.* THE CANADIAN YELLOW-ROOT.

ENGRAVINGS—Bot. Mag. t. 3019, and t. 3232.

SPECIFIC CHARACTER.—Lower leaves stalked, upper ones nearly sessile. Cupels ovate, acute.

DESCRIPTION, &c.—The flower of this plant, though small, is brilliantly white; and the leaves, and fruit, which looks like a large scarlet mulberry, are very ornamental. It is a native of Canada, where it grows in marshy places; and where the root, which is covered with tubercles that are yellow inside, is used both as a tonic medicine and as a yellow dye. It was introduced in 1759, but it is seldom seen in British gardens, as, if not kept very moist, it will not live through a summer.

## GENUS V.

ADONIS, *Dill.* THE FLOS ADONIS.*Linn Syst.* POLYANDRIA POLYGYNIA.

GENERIC CHARACTER—Calyx of five sepals. Petals from five to ovate. Cotyledons distant. Leaves deeply cut into numerous linear fifteen. Stomachia numerous. Ovary spiky, spike-like. Flowers solitary, produced at the top of the stem or hooked, and crowded on an elevated receptacle or torus. Embryo fifteen lobes.

DESCRIPTION, &c.—Most of the plants belonging to this genus are annuals with crimson flowers, and hence the name, as they are fabled to have sprung from the blood of Adonis when he was wounded by the wild-boar. There is probably only one species of perennial Adonis, as, though four or five are marked in some catalogues, they appear to be all varieties of *A. vernalis*.

1—*ADONIS VERNALIS*, *Linn.* THE SPRING ADONIS.

SYNONYMS—*A. Helleborus*, *Crautz*; *A. pinnata*, *Jacq*; *A. Mentzeli*, *Dc*; *A. siberica*, *Patrin*. *A. davurica*, *Reichb*; *A. Irreutiana*, *Dc*.

ENGRAVINGS—Bot. Mag. t. 134, and our fig. 1 in Plate I.

VARIETIES—*A. v. 2 volgensis*, *A. volgensis*, *Stev*; *A. chlorophylla*, *Fisch*. Stems branched. Sepals of the calyx pubescent on the outside.

*A. v. 3 pyrenaica*, *A. pyrenaica*, *Dc*. Stem branched. Radical leaves on long stalks. Cupels smooth.

SPECIFIC CHARACTER—Radical leaves abortive, or reduced to the thinning sides. Stem leaves sessile, and multifid with entire lobes. Ovary spiky, hooked with the recurved styles. Roots black and wrinkled.

DESCRIPTION, &c.—A very showy plant, a native of the north of England, in valleys, and of the south on the sunny parts of mountains, flowering immediately after the melting of the snow. It flowers freely in English gardens in almost any soil, provided the situation in which it grows be open to the sun. It was introduced before the time of Parkinson (1629), as he speaks of it as the Great Ox-eye, or large yellow Anemone. It is a very showy plant, and well deserving of cultivation, though of late years it has been somewhat neglected from the great number of novelties that have been introduced into our flower-gardens.

## GENUS VI.

## PULSATILLA, Willd. THE PASQUE FLOWER.

*Lin. Syst. POLYANDRIA POLYGYNIA.*

**GENERIC CHARACTER**—Involucrum sessile, distant from the flower. Petals wanting. Sepals coloured and petal-like; varying from five to fifteen. Caryopsides ending in a long feathery tail. Leaves much cut, with a dilated petiole, clasping the stem.

**DESCRIPTION, &c.**—The beautiful flowers which compose this genus, have been separated from *Anemone*, to which they are closely allied, on account of their carpels or caryopsides having feathery tails, while those of the true *Anemones* have tails which are not feathery. Though I am in general averse to multiplying genera, as I think every new name that is to be learnt adds greatly to the difficulties which the botanical or floricultural student has to surmount, yet I have adopted this distinct genus; because the grounds of distinction are such as can be easily ascertained with the naked eye; and as there are but few species in *Pulsatilla*, the finding a feathery-tailed carpel in any unknown species of *Anemone* will show that it must be one of these, and will thus help the student to discover its specific name. Every species, both of *Anemone* and *Pulsatilla*, has, what is called an involucrum, consisting of three leaves joined together round the stem, at some distance below the flower; and in *Pulsatilla* these leaves have no footstalks, and form a kind of sheath round the stem. The leaves of all the species are much cut, and the plants are all more or less hairy. The name of *Pulsatilla* is said to be from *Pulso*, to beat, from the plants growing naturally in exposed situations, where they are much beaten about by the wind.

## 1.—PULSATILLA VERNALIS, Mill. THE SPRING PASQUE FLOWER.

**SYNONYMIS.**—*Anemone vernalis*, *Lin.*; *Anemone sulphurea*, *Alli-* trifid, smoothish. Flower erect. Involucrum very hairy. Sepals six, *omn.* straight, elliptical oblong. (*G. Don.*)

**ENGRAVINGS.**—Swt. Bot. Flow. Gard. t. 205; and our *fig. 4* in late 2.

**SPECIFIC CHARACTFR.**—Leaves pinnate, segments cuneate-lanceolate, | resembling parsley.

**VARIETIES.**—*P. v. 2*, *Iuteus*, *G. Don.* Flowers yellow.

*P. v. 3 autumnalis*, *G. Don.* Flowering in autumn. Leaves

**DESCRIPTION, &c.**—This very singular little plant, when not in flower, exhibits only a dense tuft of leaves quite close to the ground, covered all over with hairs, particularly when young. The flowers first appear in the shape of a very hairy bud, the outer covering of which is an involucrum cut into long awl-shaped segments, and densely covered with thick spreading hairs. The bud soon expands into a very handsome flower, the six broad sepals composing which are of a brilliant white inside, and tinted with pale pink and pale blue on the outside. The stamens are yellow, and the pollen white. The large size of the flowers in comparison with the close tuft of small leaves from which they spring, produces a very striking effect. There is a variety with purple flowers. The species is a native of Switzerland, where it is a native of the highest mountains near the limits of the perpetual snow, and it was introduced in 1752. The flowers appear in April. This plant is very suitable for rockwork, and when grown in the open border, it should be in a sandy soil, and in a dry open situation, as damp is very injurious to it. As it ripens abundance of seeds, it may be increased either by them, or by dividing the root; taking care to sow the seeds in pots as soon as they are ripe, and to keep the young plants when they come up safe from slugs and woodlice, which are very apt to destroy them.









2.—PULSATILLA PATENS, *Mill.* THE SPREADING PASQUE FLOWER.SYNONYME.—*Anemone patens*, *Lin.*ENGRAVINGS.—Bot. Mag. t. 1994; and our *fig. 2* in Plate 2; both of the cream-coloured variety.VARIETY.—P. p. 2 Ochroleuca, *G. Don.* Flowers cream-coloured.

SPECIFIC CHARACTER.—The flower rising before the full expansion of the leaves. Involucro large. Radical leaves palmately cut. Flower erect, spreading, hairy; sepals lanceolate.

DESCRIPTION, &c.—A very handsome species, with large, widely spreading flowers, which rise from the ground before the leaves, and expand before the radical leaves are fully unfolded. The involucro is very large and cup-shaped. The other leaves rise from the root round the stem, and they are palmate, with the footstalk attached to the centre. The flowers are large, and either purple or cream-coloured; the former being considered the species, and the latter the variety. The plant is a native of Siberia. It grows about a foot high, and the flowers, like those of all this genus, appear in early spring. The name of Pasque-flower, indeed, intimates that these flowers appear about Easter. Like all the other species, it prefers a dry soil and an open situation. When the seeds are sown it is customary to rub them together between the hands to divest them of their feathery tails, which get entangled with each other, so as to render it difficult to separate the seeds. Some gardeners mix the seeds with a little fine sand before sowing for the same purpose.

3.—PULSATILLA VULGARIS, *Mill.* THE COMMON PASQUE FLOWER.SYNONYMEN.—*Anemone pulsatilla*, *Lin.*; *A. pratensis*, *Withering*; *A. collina*, *Sol.*ENGRAVINGS.—Eng. Bot. t. 51; 2d edit. t. 777, and our *fig. 5* in Plate 2.VARIETIES.—P. v. 2 rubra, P. rubra, *Dale*; A. p. δ rubra, *Lam.* Plant dwarf, flowers erect, spreading; sepals blunt.P. v. 3 lilacina; A. p. γ lilacina, *Dcc.*; A. intermedia, *Schl.*A. longipetala, *Schl.* Flowers lilac, nodding.P. v. 4 Dahurica; A. p. β Dahurica, *Dcc.* Plant dwarf, very hairy; flower erect, sepals oblong and pointed.

SPECIFIC CHARACTER.—Flower solitary, nearly erect; segments six, pointed, hairy. Leaves bi-pinnate, leaflets deeply cut, with linear lobes. Involucro deeply cut into numerous linear segments.

DESCRIPTION, &c.—It is this flower that has obtained for the genus the general name of Pasque-flower, from its flowering at Easter, which was formerly called Pasque in England, as it still is Pâques in France, from the Paschal lamb having been eaten by the Jews at that season.

The Pasque flower is common all over Europe in dry, sandy, or chalky soils; but it is never found unless the soil be quite dry, and the situation open. It will not live in a close or smoky atmosphere. The flower has rather a singular effect, from the long silky hairs that cover its deep purple sepals on the outside; particularly in Italy, where it is very abundant, and where the heat of the climate gives intensity to its colour. The whole plant is acrid, and will raise blisters; and the juice of the flowers is said to dye paper green.

4.—PULSATILLA ALPINA, *Spreng.* ALPINE PULSATILLA.SYNONYMES.—*A. alpina*, *Lin.*; *A. baldensis*, *Lam.*; *A. burseriana*, *Hort.*; *A. myrrhidifolia*, *Vill.*; *A. apifolia*, *Wild.*; *A. sulphurea*, *Cam.*the size and colour of the flowers, which are white, yellow, or purple. The most distinct are *P. a. flavescens*, and *P. a. micrantha*.ENGRAVINGS.—Bot. Mag. t. 2007; and our *fig. 1*, in Plate 2.

SPECIFIC CHARACTER.—Leaves bi-pinnate; segments deeply cut. Involucro large, of the same form as the leaves. Flower quite erect; sepals elliptic, spreading.

DESCRIPTION, &c.—Perhaps no species varies more than this does. Sometimes the flowers are as large as those of the largest Anemones grown by florists, and at others they are as small as those of the wood Anemone. The colour is always white or yellowish, though the backs of the sepals are sometimes purple; and the leaves,

which appear before the flowers, always resemble those of parsley. The involucre is very large, and of the same form as the leaves. The height of the plant also differs, from a few inches to two or three feet. When grown in gardens it does not require any particular care, but it attains the largest size, and has the finest flowers in a sandy loam. The flowers are very often seen double, as is the case with that of the specimen represented in Plate 2.

5.—**PULSATILLA PRATENSIS**, *Spreng.* THE MEADOW PASQUE FLOWER.

**SYNONYMS.**—*P. integrans*, *Storch*; *Anemone pratensis*, *Linn.*; *A. pulsatilla*, *B. Lam.*; *A. sylvatica*, *Vill.*; *A. obsolata*.

**VARIETY**—*P. p. 2 albana*, *A. albana*, flowers white. *G. Don.*

**GRAVINGS**—Bot. Mag. t. 186, and our fig. 3, in Plate 2.

**SPECIFIC CHARACTER.**—Leaves pinnate, segments deeply cut, lobes linear. Involucre large, resembling the leaves. Flower campanulate, pendulous; segments six, reflexed at the tip.

**DESCRIPTION, &c.**—This species is very distinct, from its drooping, bell-shaped flower, which bears very little resemblance to that of an Anemone. The leaves resemble those of parsley, and the involucre is very large, and joined together so far up, as to give it the appearance of a deep cup. It is a native of Denmark, the north of Germany, and Russia, and it is found occasionally in France, always growing in meadows, but in dry, poor, clayey soils. The whole plant is extremely acrid. There are three kinds; one with very dark purple flowers, another with the flowers cream-coloured, and a third with the flowers of a pure white. When grown in gardens it should be in a poor soil, and in an open situation.

OTHER SPECIES OF PULSATILLA.

*P. HALLERI*, *Spreng.*; *Lodd. Bot. Cab.* t. 940.

A native of Switzerland; introduced in 1816. Flowers, pale purple, covered with white, silky hairs on the outside.

*P. CERNUA*, *Thunb.*; *Ladus' Mag. of Gard.* t. 7.

A native of Japan; introduced in 1806. Flowers crimson, covered with golden-coloured hairs on the outside.

*P. NUTTALIANA*, *Dc.*; *ANEMONE LUDOVICIANA*, *Nutt.*; *A. PATENS*, *Hook.*; *CLEMATIS HIRSUTISSIMA*, *Pursh.*

A very distinct species, with ternate leaves, and erect flowers, which are sometimes purple, and sometimes cream-coloured.

GENUS VII.

ANEMONE, *C. Bauh.* THE ANEMONE, OR WIND-FLOWER.

*Linn. Syst.* POLYANDRIA POLYGYNIA.

**GENERIC CHARACTER.**—Involucre of three leaves more or less distant from the flower. Petals wanting in the single flowers. Calyx of from five to fifteen, coloured, petal-like sepals. Caryopsides without feathery tails. Leaves deeply lobed. Roots tuberous.

**DESCRIPTION, &c.**—The true anemones differ from the Pasque flowers, principally in the carpels; which, in the present genus, are without the feathery tails that formed so marked a feature in the preceding one. The flowers of the species of *Pulsatilla* are also generally hairy on the outside, while the true anemones are smooth. The name of anemone signifies wind-flower, the species generally growing wild in places exposed to the wind.

1.—ANEMONE PALMATA, *Lin.* THE PALMATE ANEMONE.

**SYNONYMS.**—*A. latifolia*, *Ger.*; *A. lutea*, *Hort.*; *Cyclamen-leaved anemone*.

**ENGRAVINGS.**—Bot. Rep. t. 172; Bot. Reg. t. 200; Bot. Cab. t. 1660; and our *fig.* 1 in Plate 3.

**SPECIFIC CHARACTER.**—Leaves cordate, suborbicular, bluntly 3—5-lobed, slightly toothed in the margin, hairy. Involucrum sessile, spreading, tufid. Sepals ten or twelve, oblong.

**DESCRIPTION, &c.**—A very distinct species, with golden yellow flowers, and roundish leaves, which strongly resemble those of the common cyclamen. The involucrum is near the flower in the bud; but, as the flower-stem grows, the distance continues to increase till the flower expands, when it has become very considerable. Sometimes two flower-stalks spring from the same involucrum, a circumstance rarely met with except in this genus; and, when this is the case, the later and smaller flower has generally a second involucrum near the flower. The leaves are roundish, and closely resemble those of a cyclamen; but the involucrum resembles that of the other species of anemone. The species is a native of Portugal and the coast of Barbary, and it was introduced before 1597; but it is rarely met with in British gardens. It succeeds best on rock-work, or in any place which is dry and exposed to the sun and air. Thus situated, it flowers freely, and produces a brilliant effect in April, when large yellow flowers are not abundant. It is sometimes kept in pots, and I saw a large stock of it thus grown at Pope's Nursery, at Handsworth, near Birmingham, a few years ago; but it is by no means so generally cultivated as it deserves to be. The roots are tuberous, and they are generally planted in autumn, turning a flower-pot over them, if they are in the open ground, during very severe frosts; or they may be planted in February.

2.—ANEMONE APENNINA, *Smith.* THE BLUE MOUNTAIN ANEMONE.

**ENGRAVINGS.**—Eng. Bot. t. 1062; 2d edit. t. 780; and our *fig.* 3, in Plate 3.

and toothed. Involucrum of three-stalked, deeply-cut, ternate leaves. Flower solitary. Petals numerous, lanceolate. Pericarp pointed, awn less. (*Smith*).

**SPECIFIC CHARACTER.**—Leaves trinerviate, segments lanceolate, cut,

**DESCRIPTION, &c.**—This very beautiful species is a native of Italy, where it is found in great abundance in the woods. It is sometimes found wild in England; but it is very doubtful whether it is really a native of this country. The colour of the flowers is a bright and beautiful blue, and the sepals, which vary in number from twelve to twenty, are bent slightly back, so as to give a great depth and richness to the colour by the addition of shade. It has been sometimes asserted that no genus has plants with flowers of a bright yellow and a bright blue; but this and the preceding species prove the assertion to be incorrect. The blue mountain anemone will grow and flower freely in any common garden soil. The roots are tuberous, and should be planted in October, or February.

3.—ANEMONE NEMOROSA, *Lin.* THE COMMON WOOD ANEMONE.

**ENGRAVINGS.**—Eng. Bot. t. 355; 2d edit. t. '78; and our *fig.* 8, in Plate 3.

**VARIETIES.**—*A. n. 2*, fl. pl., *Hort.* The flowers are double, and very handsome.

*A. n. 4*, *variega*, *Don.* Flowers pale blue.

*A. n. 3*, *quinqüefolia*, *Lin.* Leaves decidedly five-lobed.

**SPECIFIC CHARACTER.**—Involucrum of three ternate, or quinate, stalked, lobed and cut leaves. Flowers solitary. Petals six, elliptical, veined. (*Smith*).

**DESCRIPTION, &c.**—There are few British plants more beautiful than this little denizen of our woods, which grows under the shade of the trees, and among the long grass on banks under hedges. It is one of the first flowers of spring, as even in March, in bright sunny weather, it may be seen opening its snow-white flowers as

widely as possible, as though it wished fully to enjoy the warmth and light ; but in gloomy weather the flowers close. In gardens it is a very beautiful ornament to the borders ; and it requires no care save that of never suffering it to become quite dry, as its roots are fusiform and furnished with very few fibres.

#### 4.—ANEMONE RANUNCULOIDES, *Lin.* THE YELLOW WOOD ANEMONE.

**SYNONYMS.**—*A. lutea*, *Lam.*; *Crow-foot Anemone*.

**ENGRAVINGS.**—Lodd. Bot. Cab. t. 556; Eng. Bot. t. 1484; 2d edit. t. 779; and our fig. 5 in Plate 3.

**VARIETY.**—*A. r. 2*, *purpurea*. Flowers purple.

**SPECIFIC CHARACTER.**—Involucræ of three or five shortly-stalked, cut and toothed leaves. Flowers solitary, or in pairs. Petals five or six, elliptical. (*Smith*).

**DESCRIPTION, &c.**—The flower of this beautiful little plant is very like that of the Lesser Celandine (*Ficaria ranunculoides*) ; but it is easily distinguished from that pretty little flower by its involucræ, and its stamens and pistil having only one covering, which modern botanists call a calyx, though it is as brilliantly coloured as any corolla. The species is sometimes found wild in Hertfordshire and Kent ; but it is doubtful whether it is really a native of England. It is, however, common in many parts of the Continent, and on the Pyrenees is found a variety of it with purple flowers. It has a long, fusiform root, with few fibres ; and, when planted in gardens, it should be in deep, free soil.

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#### 5.—ANEMONE SYLVESTRIS, *Lin.* THE SNOW-DROP ANEMONE.

**ENGRAVINGS.**—Bot. Mag. t. 54; Lodd. Bot. Cab. t. 1739.

**SPECIFIC CHARACTER.**—Leaves ternate or quinate, hairy beneath; segments deeply-toothed at top; those of the involucræ stalked.

Segments deeply-toothed at top; those of the involucræ stalked.

Segals six, elliptical. Fruit very hairy. (*G. Don.*)

**DESCRIPTION, &c.**—A very elegant plant with white flowers, which droop in the bud, and have very much the appearance of a snow-drop ; but become large and showy when they expand. There are frequently two flower-stalks from one involucræ, as in *A. palmata*. It is a native of Germany, whence it was introduced before 1596 ; but it is now very seldom seen in gardens. It is very hardy, and it will grow in any soil or situation ; and it is very easily propagated, as it has creeping roots, which it extends on every side, throwing up abundance of suckers, which of course only require to be divided from the parent plant. It also ripens abundance of seeds, the outside of which is quite woolly.

#### 6.—ANEMONE ALBA, *Juss.* THE WHITE ANEMONE.

**SYNONYM.**—*A. ochotensis*, *Fisch.*

toothed at top; those of the involucræ stalked. Pedicel solitary.

**ENGRAVINGS.**—Bot. Mag. t. 2167; Bot. Cab. t. 322.

Segals five, obovate, concave. Fruit very hairy. (*G. Don.*)

**SPECIFIC CHARACTER.**—Leaves ternate or quinate; segments deeply-

**DESCRIPTION, &c.**—In botanical character this species is very nearly allied to the preceding one, but in appearance they are very different ; *A. alba* being a dwarf plant with a tuft of leaves, which are purple on the under side close to the ground, and a single flower-stalk rising from them like that of a daisy. The flowers are also very different, those of *A. alba* being produced in August and very small, with rounded, concave sepals ; while, that of *A. sylvestris* is large and flat. *A. alba* is a native of the Crimea, and it would probably be quite hardy in British gardens, were it planted in the open border ; but from its small size and habit of growth, it is generally grown in pots or on rock-work. The roots are creeping and fibrous ; and the seeds are so woolly, as to have their covering used in their native country as a substitute for cotton. It was introduced in 1820.









7.—ANEMONE VITIFOLIA, *Buch.* THE VINE-LEAVED ANEMONE.

ENGRAVINGS.—Bot. Reg. t. 1385; Bot. Mag. t. 3376; Botanist, t. 9; and our fig. 6 in Plate 3.

SPECIFIC CHARACTER.—Leaves large, cordate, five-lobed, clothed

with white wool beneath. Stem also covered with white wool. Involucrum stalked, woolly beneath, and smooth above.

DESCRIPTION, &c.—A very handsome species, a native of Nepaul, whence it was introduced by the late Countess Amherst in 1829, and first sown at Montreal, Seven Oaks, Kent. It is now common in every part of Great Britain. The plants grow about two feet high; the flowers are large, and of milky whiteness; they have also something of the waxy look of a white Camellia. It was found in Nepaul by Dr. Buchanan Hamilton, in moist woods on the mountains, always near a rill or torrent, and in a shady situation; but in England it grows freely in the open border, or in a bed fully exposed to the sun. It is generally propagated by seeds, which it ripens in abundance, but which do not flower till the second year after they are sown.

8.—ANEMONE NARCISSIFLORA, *Lin.* THE NARCISSUS-FLOWERED ANEMONE.

SYNONYMS.—*A. umbellata*, *Lam.*; *A. fasciculata*, *Tourn.*; *A. dubia*, *Bell.*; *Ranunculus montanus*, *Clus.*

ENGRAVINGS.—Bot. Mag. t. 1120; and our fig. 7 in Plate 3.

SPECIFIC CHARACTER.—Radical leaves somewhat hairy; palmately 3—5-parted; lobes deeply-toothed. Involucrum large; lobes 3—5-cleft. Flowers in umbels.

DESCRIPTION, &c.—This species is very distinct, from its flowers being produced in umbels; and it varies so much when raised from seed, that five or six varieties of it are recorded in books. They are, however, very seldom seen in this country. The species is a native of the Pyrenees; but it is also found wild in Switzerland, on Mount Caucasus and the mountains of Siberia, and in Canada, and on the western coast of North America. A plant very similar, if not the same, has also been found on the mountains of Nepaul. The flowers are white or cream-coloured, and sometimes purple on the outside. The roots are fibrous, and the carpels are quite destitute of wool. This species grows best in calcareous soil, or in peat and sand. It is very ornamental, and highly deserving of cultivation. It flowers in April and May. It was introduced in 1773 by the Earl of Bute. One of the varieties is said to be sweet-scented.

9.—ANEMONE STELLATA, *Lam.* THE STAR, OR BROAD-LEAVED ANEMONE.

SYNONYMS.—*A. hortensis*, *Lin.*; *A. versicolor*, *Sal.*; *A. purpurea*, *Hort.*; *A. pavonina*, *Dec.*; *A. fulgens*, *Gay.*; Peacock Anemone, Purple Anemone.

ENGRAVINGS.—Bot. Mag. t. 123; Swt. Brit. Flow. Gard. t. 112;

and our fig. 2 in Plate 3.

SPECIFIC CHARACTER.—Leaves three-parted, lobes wedge-shaped, deeply-toothed. Involucrum sessile, oblong, three-forked. Sepals ten or twelve, lanceolate.

DESCRIPTION, &c.—The tubers of this species, and of six or eight varieties of it, may be purchased in the seed-shops generally under the name of *Anemone hortensis*. The varieties are generally purple or crimson, or white, or some of the intermediate shades; but one, sometimes called *fulgens*, is of a bright scarlet. When these flowers become double, they closely resemble those of *A. coronaria*, but they may be always distinguished by their pointed sepals. The tubers are black, and generally they look as though a number of very small potatoes had grown together. On the upper side there are several eyes or buds; and when the tubers are planted this side must be kept uppermost, as from it the shoots will proceed; while the fibrous roots, through which the plant derives its nourishment, grow from below. The tubers are very brittle, and care should be taken not to break them in planting, as it weakens the plants; but if an accident does happen, the broken pieces should be

saved and planted, as they will form fresh tubers in time. It is generally not thought worth while to make a regular bed for this species and its varieties, as they are very inferior both in size and beauty to the varieties of *A. cormaria*; and they may be planted in the borders in any tolerably good garden mould, taking care that they are not under the drip of trees. They flower very well in London, without appearing at all injured by the smoke. The species is a native of the south of Europe; and it was introduced before 1596.

#### 10.—ANEMONE CORONARIA, *Linn.* THE NARROW-LEAVED, OR POPPY ANEMONE.

**SYNONYMS.**—*A. hortensis*, *Wern.*; *A. ranunculus*, *Ram.*; *Gaultheria* flowering Anemone; Garden Anemone.

**ENGRAVINGS**—Bot. Mag. t. 814, and our fig. 1 in Plate 3; and figs. 1, 2, and 3, in Plate 4.

**SPECIFIC CHARACTER**—Leaves ternate, deeply cut, with numerous linear segments. Involucel sessile, deeply cut. Sepals six, oval, rounded.

**DESCRIPTION, &c.**—This species and its varieties constitute what are generally termed the florists' anemones; and in the double varieties the sepals, which are called by the florists the guard-leaves, remain the same, while the stamens and carpels are changed into petals of quite a different shape and appearance. The tubers, which are sold in the seed-shops, and resemble those of the last species, should be planted either in October or February: in the first case they will flower in April, and in the latter in June. According to the usual method of growing these flowers, a bed should be dug, eighteen inches or two feet deep, and at the bottom of this bed should be laid a stratum, six or eight inches deep, of old cow-dung; if two years old, so much the better. The bed should then be filled in with fresh loam from a field, if it can be procured, and if not, with good sandy loam. If expense be an object, the cow-dung may be mixed with earth at the bottom of the pit, but it is better without; and there should always be at least a foot deep of soil above it. The bed should be raised about four inches above the level of the surrounding garden, and drills should be drawn from one end of the bed to the other about two inches deep. White sand should then be sprinkled along the drills, and the tubers should be planted three or four inches apart, according to their size, the largest kinds being, of course, planted farthest apart. The drills should then be covered level, and the beds raked quite smooth and even. As anemones are tolerably hardy, they will very seldom require any protection, but in cases of very hard frost a mat or two may be laid on the autumn-planted beds. When the plants begin to appear above ground, if the season be dry, they may be occasionally watered with rain-water; and then watering may be continued regularly as the plants approach flowering.

Another mode of cultivating the anemone, and which is said to produce flowers of extraordinary size and beauty, is to form a bed about eighteen inches deep, and to place a layer of stones, brickbats, and other drainage at the bottom, about six inches deep. The bed is then filled up with fresh loam, and the tubers planted in drills with sard, and covered as before directed, and over the whole is placed a layer of cow-dung three or four inches thick. The beds which are planted in February are watered with pond or rain-water regularly once a day, if the weather should be dry and not frosty, during the month of March, and twice a day afterwards till they flower, but those that are planted in autumn are seldom watered till the leaves appear above ground. The watering carries the manure in small quantities into the ground, and the young plants thus treated are said both to grow and to flower with extraordinary vigour. It must be observed, however, that there must be at least two inches of soil between the cow-dung and the tubers; as, if this were not the case, the tubers would be rotted.

After the anemones have done flowering, they should be kept quite dry by covering the bed with hoops and

mats till the foliage becomes brown and withered, which is generally in about a month after the flowers have faded. The tubers should then be taken up, and laid on a shelf in an airy place to dry; the stem and leaves being cut off when they are taken up. When quite dry, the tubers are put into paper bags, and kept till the planting time the following season. The tubers may be planted every year for fifteen or twenty years in succession; but they flower best from their fifth to their twelfth year. They are sometimes raised from seed in this country; but the flowers are very far inferior to those produced by tubers imported from Holland. When, however, it is wished to raise seedlings, the seed should be sown as soon as ripe, or in August; rubbing it previously to sowing to divest it of its downy covering, or mixing it with a little sand. The seed being of the kind called caryopsides, that is, invested in its carpel, is a long time before it comes up. When, however, it does so in spring, the young plants are suffered to grow, till the usual time for taking up the tubers, which will have formed, and should be dried and put in paper bags like the old ones. If the young plants form any flower-buds the first year, they should be taken off without being suffered to expand, as they would weaken the roots; but the second season they may be permitted to flower.

*A. coronaria* is a native of Greece, of Italy near Rome, of Asia Minor, and of the south of France, always growing in moist places. It was introduced into England before 1796, and has been a favourite garden flower ever since.

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#### OTHER SPECIES OF ANEMONE.

*A. CAROLINIANA*, *Walt.*; *A. TENELLA*, *Pursh.*

A small and delicate plant, with small flowers, which are purplish on the outside. Introduced in 1824.

*A. BIFLORA*, *Dec.*

Flowers yellow, white, or purplish, always produced in pairs; a native of the Levant.

*A. CÆRULEA*, *Dec.*; *A. URALENSIS*; *A. BALDENSIS*, *Lin.*; *A. FRAGIFERA*, *Mun.*

Flowers blue or white, and generally produced in pairs; root fusiform. A native of Siberia; but also found in Switzerland and other mountainous parts of Europe, and in North America, on the Rocky Mountains. Introduced in 1798.

*A. PARVIFLORA*, *Mich.*; *A. CUNEIFOLIA*, *Juss.*; *A. TENELLA*, *Banks*; *A. BOREALIS*, *Rich.*

Flowers small, white; carpels woolly, forming a large globose head when ripe, which is more ornamental than the flower. Introduced in 1824. This species is a native of North America, between the Rocky Mountains and the Arctic Sea; and it is interesting as being the most northern plant found by Dr. Richardson in his journey with Captain Franklin in search of the North-west passage.

*A. LANCIFOLIA*, *Pursh.*

A native of Pennsylvania and Virginia, always growing in boggy soil. The flowers are white, and always have only five sepals. The leaves are ternate, and the segments lanceolate. The carpels are oval, and the styles short and hooked. Introduced in 1823.

*A. TRIFOLIA*, *Lin.*

A native of France, strongly resembling the preceding species, except that there are frequently six sepals, and the stamens are often more than a hundred in number.

A. VIRGINIANA, *Lin.*; A. HIRSUTA, *Mench.*

Flowers pale green or purplish; carpels woolly, collected into an oblong head. A native of Virginia. Introduced in 1722.

A. HUDSONIANA, *Rich.*; A. MULTIFIDA, *Hook.*

A native of North America, near Hudson's Bay. The leaves are so much cut as to look like fringe, and the flowers vary in colour from white to purple and bright crimson. Introduced in 1826.

A. PENNSYLVANICA, *Lin.*; A. DICHOTOMA, *Lin.*

Flowers large, white; anthers golden yellow. Introduced in 1766. A native of North America and also of Siberia.



## GENUS VIII.

RANUNCULUS, *C. Bauh.* THE RANUNCULUS, OR CROWFOOT.*Lin. Syst.* POLYANDRIA POLYGYNIA.

**GENERIC CHARACTER**.—Calyx of five deciduous sepals, which are not loosened at the base. Petals five, rarely eight or ten, furnished with a nectariferous scale on the inside at the base. Stamens numerous. Ovules numerous, ovate, somewhat compressed, ending in a point or horn, which is scarcely ever longer than the seed; smooth, striated, or tubercled, disposed into globose or cylindrical heads. (*G. Don.*)

**DESCRIPTION, &c.**.—The plants belonging to this genus are generally found in moist places; and hence they are called Ranunculus from *Rana*, a frog. They take their English name of Crowfoot from the shape of the leaves, which are deeply cut, so as to resemble the foot of a bird. Many of the species are English weeds; and those that are, may be considered to be among the most beautiful of the British wild flowers. All the species are poisonous from their acridity, but some are more so than others. Nearly all the species have either yellow flowers or white flowers, and all have a distinct green calyx of five sepals, united at the base. The flowers, when single, consist of five petals, numerous stamens, and numerous carpels, each of which has a little beaked stigma, without any style. The carpels are placed on the receptacle, which is drawn up into a cone-like form, to receive them; and, when the petals fall, they appear in a globose head, as may be seen in the common buttercup (*Ranunculus acris*) and other species. In the double flowers, the stamens and carpels are entirely or partially changed into petals. The leaves are generally deeply cut; and the petiole, or footstalk, always partially sheathes the stem. The seeds of all the kinds keep well, but they are a long time after they are put in the ground before they germinate, and all the species like a strong loamy soil.

1.—RANUNCULUS ASIATICUS, *Lin.* THE ASIATIC OR GARDEN RANUNCULUS.

**ENGRAVINGS.**.—Our figs. 1, 2, 3, in Plate 6.

Calyx spreading, afterwards reflexed. Spikes of carpels cylindrical.

**SPECIFIC CHARACTER.**.—Leaves ternate, or biterinate; segments toothed or deeply tufted. Stem erect, simple, or branched at the base.

(*G. Don.*)

**DESCRIPTION, &c.**.—The great beauty and variety of these flowers have rendered them favourite garden flowers for nearly three centuries, and perhaps longer; for they appear to have been common in Britain before 1596, though they are natives of the Levant. There are now a great number of named varieties and sub-varieties







'Garden varieties of *Ranunculus Asiaticus*



in gardens; which are all distinguished from all the other species of the genus by the compact, ball-like, appearance of the double flowers; and by the petals in all being obovate or nearly oval and very blunt in shape, and longer than the calyx. The carpels are also smooth, and very much compressed, with a deeply hooked stigma; and the head they form is cylindrical, instead of being globose, as in the common buttercup. The leaves are deeply cut into three large segments, each of which is generally divided into three others, which are more or less cut again into narrow lobes. When well grown, each flower should have a strong straight stem from six inches to a foot high. The flowers should be bell-shaped, and at least two inches in diameter, with the petals laid regularly over each other. The petals should be of rich brilliant colours, each being clearly marked; and each petal should have an entire well-rounded edge. There are innumerable varieties, for no plant varies more when raised from seed; but they may be all traced to one of three kinds, which some botanists consider as varieties, and others as distinct species. These are *R. a 1 rularis*, commonly called the Persian Ranunculus. In this variety the leaves are cut into three large lobes, and then into numerous narrow segments, which are also disposed in threes, and which are narrow and sharply pointed. The flowers are very variable in colour, and they are frequently only semi-double. The second variety, *R. a 2 sanguineus*, has very double flowers, which are always of some very dark colour, and generally crimson or scarlet, or very dark purple or orange. The leaves are in three large lobes, which are cut into smaller segments, but the segments are not disposed in threes, and they are always obtuse at the points. This kind is called the Turban Ranunculus, and it is a native of Turkey and Syria. The third kind, *R. a 3 tenuilobus*, which is called the Venetian or Cretan Ranunculus, is a native of Cyprus, and has always white or yellow flowers. The leaves are much cut into a number of linear lobes, none of which are much longer than the others. This Ranunculus is a tuberous-rooted plant, the tubers, which are called the claws, being what is called fascicled, and resembling a number of small carrots, growing together, and having a common centre. These tubers are purchased in the seed-shops, being imported from Holland; and the best time for planting them is the beginning of February. They may, however, also be planted in October; but it is rather remarkable, that the roots planted in autumn flower only a few days sooner than those planted in February. No Ranunculus will flower well in summer; as, though they are natives of a warm climate, they flower there in winter, or in the rainy season of the year; they therefore require coolness and moisture, though they cannot endure frost. The tubers may either be planted in the open border if the soil be loamy and rich, or in boxes; but if it be wished that they should flower particularly well, a bed may be prepared for them in the following manner:—A pit should be dug of any required length, about four feet wide, and eighteen inches deep; and at the bottom should be placed a layer of two years old rotten cow dung six or eight inches thick. The bed should then be filled in with fresh strong loamy soil, procured, if possible, from an old pasture; and it should be raised four inches above the surface of the garden, to allow for the soil sinking. The surface of the bed should then be raked even, care being taken not to press the earth too close, as the plants will not thrive unless the particles of earth be left sufficiently loose to allow the air to penetrate through them. When all is ready, drills should be made in the bed about two inches deep, and five inches apart; and a little white sand having been laid along the drills, the roots should be placed in them, with their claws downwards, about four inches asunder. The bed should then be raked over so that the roots may be covered about an inch and a half deep. The roots will be some days before they vegetate, and as at this period they are much swelled by the moisture they have imbibed from the ground, they are extremely susceptible of injury from frost, and the bed should be covered with some

loose straw or mats; but the covering should be removed as soon as the leaves begin to appear, as if it be continued too long, the tuber will become mouldy and the plants will damp off. When the plants begin to grow, gardeners generally tread the earth between the rows, and press it round the root, which may have partially risen out of the ground, as this is frequently the case. If the weather should be dry in April and May, the plants should be regularly watered during those months; as if they are suffered to become too dry after they have come up, the foliage will turn yellow, and the flowers will appear stunted: and if the weather should be very hot in May, they may be shaded from the sun during the heat of the day. This shading may be advantageously continued when the plants are in flower, particularly for the darker kinds, which are most injured by being exposed to the rays of the sun. The flowers appear in May and June, and by the end of the latter month they will have disappeared, the foliage will have turned yellow, and then brown; and when this is the case, the stems should be cut off and the roots taken up and laid on one side in an airy room to dry gradually.

When it is wished to raise new varieties from seed, some plants with semi-double flowers should be set aside for that purpose, as the flowers that are quite double have, of course, neither stamens nor pistils to produce seed. No plants should be suffered to form seed-buds but those the seed of which is wanted, as those roots which have ripened seed never produce such fine flowers afterwards as they did before. The seeds should be sown in August, in pots or boxes, and kept under shelter during winter.

### 2.—*RANUNCULUS ACONITIFOLIUS*, *Linn.* THE PALMATE LEAVED RANUNCULUS.

**SYNONYM**—*R. platinifolius*, *Linn.* White Bachelor's Buttons; | **ENGRAVINGS**—Bot. Mag. t. 204, and our *fig. 5*, in Plate 5 both Fair Maid of France.

**VARIETIES**—These are very numerous, but the most interesting is | **SPECIFIC CHARACTER**—Leaves palmate, three or five parted. Stem that with small very double flowers, called the Fair Maid of France, branched, many flowered. Calyx smooth, or White Bachelor's Buttons.

**DESCRIPTION, &c.**—This plant varies very much in different situations. The species is rarely seen in English gardens; but the variety called the Fair Maid of France, is one of the most common of our border flowers. It is quite hardy, and it will grow in any soil and situation, but it flourishes most under trees, where the ground is rather moist than otherwise, though it will not bear the London smoke. From its tall branching stem, the abundance of its flowers, and its large deeply cut leaves, it is very ornamental and well deserving of cultivation, wherever the air is sufficiently pure to suit it. It is a native of middle Europe, particularly Germany, the north of Italy, and Switzerland; and it was introduced before 1596. When grown in too dry a soil, this plant is frequently attacked by an insect which destroys the leaves.

### 3.—*RANUNCULUS ACRIS*, *Linn.* THE ACRID CROWFOOT, OR COMMON BUTTERCUP.

**SYNONYMS**—King Cup; Yellow Bachelor's Buttons, Upright Meadow Crowfoot.

**VARIETIES**—Of these there are several, but the only one deserving of cultivation is the double flowered kind, called the Yellow Bachelor's Buttons.

**ENGRAVINGS**.—Eng. Bot. t. 652, 2nd edit. t. 789, Bot. Mag. t.

215, and our *fig. 4*, in Plate 5, of the double-flowered variety, called the Yellow Bachelor's Buttons.

**SPECIFIC CHARACTER**.—Lower leaves three parted, segments trifid, jagged; segments of the upper leaves linear, entire. Stem cylindrical, erect, branched, many flowered, covered with appressed hairs. Capsules forming a round head.

**DESCRIPTION, &c.**—If the buttercup were not a common weed, it would be thought a beautiful flower, from the golden hue of its glossy petals, and its very handsome leaves; and as the double-flowered variety is only found in gardens, and thus has no prejudices to contend with, it receives the admiration which would be bestowed on its progenitor, if it were equally rare. It is quite hardy, and will grow in any soil and situation where it is

sufficiently moist. Both the species and variety are natives of this country, and both are poisonous from their acridity. Though the species is called the buttercup, from the vulgar notion that the cows eating it makes the butter yellow in spring; the fact is, that no cow will touch it, and that its long stalks may be seen standing in great abundance in pastures, all the grass of which has been eaten off quite close by cows.

#### 4.—*RANUNCULUS AMPLEXICAULIS*, *Lin.* THE STEM-CLASPING RANUNCULUS.

**SYNONYMS.**—Pyrenean Ranunculus. Plantain-leaved Crowfoot.

**ENGRAVINGS.**—Bot. Mag. t. 266; and our fig. 3, in Plate 5.

**SPECIFIC CHARACTER.**—Leaves ovate-acuminate, stem-clasping. Stem many-flowered. Root fascicled.

**DESCRIPTION, &c.**—This very pretty species is known by its undivided glaucous leaves, which clasp the stem at their base; and its white flowers, which are sometimes slightly tinged with pink or purple. The plant grows erect, only branching in the flower-stem near the top, and thus taking up but little room in gardens. It is quite hardy, and will grow in any soil and situation which is not too dry. It is a native of the Alps and the Pyrenees, whence it was introduced in 1633; it flowers in April and May, and it is well deserving of cultivation, though it is very seldom seen in gardens.

#### 5.—*RANUNCULUS GRAMINEUS*, *Lin.* THE GRASS-LEAVED RANUNCULUS.

**ENGRAVINGS.**—Bot. Mag. t. 164; and our fig. 2, in Plate 5.

**SPECIFIC CHARACTER.**—Leaves lanceolate or linear, quite entire.

Stem erect, quite smooth, branching. Scales of the petals tubular.

Root fascicled.

**DESCRIPTION, &c.**—This species is known by its grass-like leaves and large flowers. It is a native of France, Spain, and Portugal, and also of England and Wales. Unlike most of the other species, it thrives most in a dry soil. It is very seldom seen in gardens, but it well deserves to be cultivated.

#### 6.—*RANUNCULUS PARNASSIFOLIUS*, *Lin.* THE PARNASSIA-LEAVED CROWFOOT.

**SYNONYMS.**—*R. montanus*, *Tourne.*; *R. cordatus*, *Gaud.*

**ENGRAVINGS.**—Bot. Mag. t. 386; and our fig. 6, in Plate 5.

**SPECIFIC CHARACTER.**—Radical leaves stalked, rather heart-shaped,

ovate-roundish; caudine ones sessile, ovate-lanceolate. Peduncles

hairy. (*G. Don.*)

**DESCRIPTION, &c.**—A very handsome dwarf plant with large white flowers, and leathery roundish leaves, very much like those of a Cyclamen. There are certainly five or six flowers on every plant; and the petioles of the leaves are very much dilated at the base. The stems are pink, and the calyx of the flowers, and sometimes even the corolla, are tinted with the same colour. There is a variety with smaller flowers and acute leaves. This species is found wild on the Alps and the Pyrenees, in fissures of rocks near to the boundary of perpetual snow. It was introduced in 1769.

#### 7.—*RANUNCULUS MONSPeliacus*, *Lin.* MONTPELIER CROWFOOT.

**SYNONYMS.**—*R. Illyricus*, *Besl.*; *R. saxatilis*, *Balt.*; *R. Philadelphicus*, *Hort.*

**ENGRAVINGS.**—Swt. Brit. Flow. Gard. t. 94; and our fig. 1, in Plate 5.

**SPECIFIC CHARACTER.**—Leaves woolly; radical ones three-lobed; lobes wedge-shaped and trifidly dentate; upper ones three-parted, entire lobes linear. Stem erect, few flowered; calyx reflexed. Carpels forming an ovate spike.

**DESCRIPTION, &c.**—A very showy plant with large yellow flowers, and clustered tubercled roots, differing however from those of the Asiatic Ranunculus by having fibres interspersed. It is a native of Montpelier, whence it was introduced about 1823; and it is quite hardy in British gardens. It should be grown in light rich soil, and it is increased by dividing the root.

## THE LADIES' FLOWER-GARDEN

### OTHER SPECIES OF RANUNCULUS.

#### R. AQUATILIS, *Lin.* THE WATER CROWFOOT.

A beautiful British aquatic, with white shining flowers, and broad floating leaves, but finely cut submerged ones. This plant has the remarkable property of being wholesome food for cattle; which is the more remarkable, as the injurious qualities of other poisonous plants are increased by growing in or near water. This species is seldom if ever cultivated in gardens.

#### R. CARDIOPHYLLUS, *Hook.*, *Bot. Mag.* t. 2999.

An American species, with flowers like those of the common crowfoot, and tuft of thickened roots, somewhat resembling those of the Asiatic Ranunculus; but with the tubers much longer and more slender. The root-leaves are heart-shaped and entire, except at the edges; while the upper ones are deeply cut. The species takes its specific name from the heart-shaped root-leaves, the word *cardiophyllum* signifying literally heart-leaved. It is a native of the north of Canada, where it is found in the limestone districts. It was introduced in 1829.

#### R. RETICULUS, *Lin.*, *Bot. Reg.* 1432.

A very coarse-growing species, with large golden yellow flowers, and broad hairy leaves. A native of Barbary, introduced in 1658.

#### R. GLACIALIS, *Lin.*

Nearly allied to *R. aconitifolius*, a native of the mountainous parts of Europe, near the limits of perpetual snow. Introduced in 1775.

#### R. GARGANICUS, *Ten.*; R. MILLEFOLIATUS, *var.* GRANDIFLORUS, *Syst. Brit. Flow. Gard.* 2nd edit. t. 218.

A very handsome species, with large orange-yellow flowers, and very deeply cut leaves, with very slender segments. A native of Naples, whence it was introduced in 1830. It is quite hardy, and it is one of the few species of the genus that are deserving of cultivation.

#### R. MILLEFOLIATUS, *Pahl.*, *Bot. Mag.* t. 3009.

The leaves and habit of the plant resemble those of *R. garganicus*, but the flowers are much smaller. The plant is ornamental, from its beautifully-cut glaucous leaves. The roots are grumose, that is, thickened near the collar, so as to form a bundle or fascicle of long, narrow tubers. The species is a native of the south of England, and the north of Africa; and it was introduced in 1824.

#### R. MONTANUS, *Willd.*; R. NIVALIS, *Scop.*, *Bot. Mag.* t. 3022.

A pretty little plant with a creeping root, or underground stem something like a rhizoma, with long fibrous roots depending from it. The species is a native of the Alps; and it was introduced in 1827. It is quite hardy in British gardens.

There are many other species, but most of them are mere weeds; and there is so great a resemblance between the flowers of even the exotic kinds, and those of the British crowfoots, which are so common in every field, and beside every lane, as to render them not worth the trouble of cultivating as garden flowers.







1 *Ranunculus Monspeliacus*  
2 *Ranunculus gramineus*  
3 *Ranunculus amphioxanthus*

4 *Ranunculus acris flore pleno*  
5 *Ranunculus Aconitifolius*  
6 *Ranunculus Parvifolius*



## GENUS IX.

TROLLIUS, *Lin.* THE GLOBE-FLOWER.*Lin. Syst.* POLYANDRIA POLYGYNIA.

**GENERIC CHARACTER**—Calyx of five, ten, or fifteen coloured petal-like sepals. Petals from five to twenty in number, small, linear, flattened, unilateate. Stamens and ovaries numerous. Capsules numerous, sessile, columnar, many seeded. (*G. Don.*)

**DESCRIPTION, &c.**—Both the English and Latin names of this genus, are derived from the globular shape of the flower of the common British species *T. europaeus*. The other species differ in the shape of their flowers; but they all agree in having the sepals more ornamental than the petals, which have rather the appearance of being abortive stamens, than of forming a corolla. They have all numerous stamens, and numerous carpels which are many-seeded. The leaves, like those of most of the plants belonging to the order *Ranunculaceæ*, are deeply cut, and with dilated petioles which partly sheathe the stem, which is hollow, and yields, when wounded, a slightly acid juice. The roots differ from those of the genus *Ranunculus*, in being always fibrous and never grumose. All the species are hardy, and would grow in the open air in British gardens, but only three or four are in cultivation. The word *Trollius* is derived from the old German word *Trol* or *Trolhen*, signifying round. None of the species yet known, appear to be at all improved by cultivation.

1.—TROLLIUS EUROPEUS, *Lin.* THE EUROPEAN OR COMMON GLOBE-FLOWER.

**SYNONYM.**—*Locke* Gowans.

**ENGRAVINGS.**—Eng. Bot. t. 28, 2nd edit. t. 797; and our fig. 5, Place 7.

**SPECIFIC CHARACTER.**—Sepals fifteen, converging so as to form a globe, and so as to conceal the petals, which are equal in length to the stamens.

**DESCRIPTION, &c.**—This flower, notwithstanding its somewhat formal appearance, has long been a favourite in gardens. The flower-stem is erect and branched, each branch terminating in a single flower. The flowers are at first small, but they gradually become larger though without opening, the sepals, which are numerous, preserving their globe-like form till they fall off, which they do, long before the seed is ripe. The petals, which are entirely hidden by the converging sepals, are about the same length as the stamens; and indeed they look more like abortive filaments a little flattened, than petals. The stamens are very numerous, as are the carpels. The leaves appear palmate, they are so deeply cleft into five distinct lobes. This plant never improves by cultivation; and those species, which have been propagated from others kept in gardens for a great many years, produce flowers exactly similar to those which are found wild in the meadows. In gardens, the globe-flower will grow in any soil or situation, but it prefers one that is somewhat moist and shady. It is readily propagated either by seeds or by division of the root. There is a dwarf variety with the stem not branched.

2.—TROLLIUS ASIATICUS, *Lin.* THE ASIATIC GLOBE-FLOWER.

**SYNONYM.**—*Helleborus aconitifolius*, *Ruth.*

**ENGRAVING.**—Bot. Mag. t. 235.

**SPECIFIC CHARACTER.**—Sepals from ten to fifteen, somewhat spreading. Petals ten, larger than the stamens.

**DESCRIPTION, &c.**—This species has large flowers, the sepals of which are of a rich dark orange, and somewhat open than those of the common globe-flower; and the petals are longer than the stamens. The stem is seldom branched, and the flowers are produced singly; they appear in May and June. This species is a

native of Siberia, and it was introduced before 1759 ; but it is seldom seen in gardens, though it is very handsome from the rich orange colour of its flowers. The leaves are also larger, and of a darker green than those of the common kind. It will grow in any soil and situation ; and it is increased by seed, or dividing the root.

### 3.—*TROLLIUS AMERICANUS*, *Muhl.* THE AMERICAN GLOBE-FLOWER.

*SYNONYMES.*—*T. laxus*, *Sat.* ; *Gaisseana venia*, *Raf.*

*ENGRAVINGS.*—*Bot. Mag.* t. 1988 : *Lodd. Bot. Cab.* t. 56 ; and our fig. 4, in *Plate 7.*

*SPECIFIC CHARACTER.*—Sepals from five to fifteen, widely spreading. Petals from five to twenty, retuse, very much shorter than the stamens.

**DESCRIPTION, &c.**—This species has very little right to the name of globe-flower, as its sepals are so widely spreading as to show not only the petals, which are short, and rather broad, and which surround the stamens like an edging of vandyke trimming, but even the carpels, which are a number of green cylindrical, or ovate bodies, in the centre of the flower. The sepals are of a pale lemon-colour, and in a variety they are of a pure white, but the petals are always of a rich yellow. The stems are not branched, but several rise from one root, each bearing a flower. The leaves are of a yellowish green, tinged with pink. This species is a native of Pennsylvania and New York, where it is found chiefly in wet places, on mountains. It flowers in May and June, and it is propagated by dividing its roots, as it has not yet ripened seed in this country. The variety with white flowers was discovered by Drummond, on the Rocky Mountains.

### 4.—*TROLLIUS CAUCASICUS*, *Stev.* THE CAUCASIAN GLOBE-FLOWER.

*SPECIFIC CHARACTER.*—Sepals ten, spreading. Petals ten, shorter than the stamens.

**DESCRIPTION, &c.**—This species has sepals of a bright yellow, and partially spreading, so as to show the petals which are shorter than the stamens. The species is a native of Mount Caucasus, and it was introduced in 1817.

### 5.—*TROLLIUS PATULUS*, *Sat.* THE SPREADING TROLLIUS.

*SYNONYME.*—*Helleborus ranunculinus*, *Smith.*

*SPECIFIC CHARACTER.*—Sepals five, widely spreading. Petals one to five, equal length to the stamens.

**DESCRIPTION, &c.**—This species has no pretension to the name of globe-flower, as its sepals are nearly flat. The flowers are of a golden yellow, and the petals are equal in length to the stamens. Neither the sepals nor petals ever exceed the number five. The species is about a foot high, but there is a variety which barely rises above the ground : both the species and the variety are natives of Siberia, and were introduced in 1800.

### 6.—*TROLLIUS LEDEBOURII*, *Spreng.* LEDEBOUR'S TROLLIUS.

*SPECIFIC CHARACTER.*—Sepals five, spreading. Petals ten or twelve, longer than the stamens. (*G. Don.*)

**DESCRIPTION, &c.**—A very handsome species, with tall, spreading stems, and large showy flowers, with five spreading sepals, and ten or twelve slender petals, which are much longer than the stamens round which they are placed. This species is a native of Siberia, whence it was introduced in 1829.

### OTHER SPECIES OF TROLLIUS.

There are several other species which have not yet been introduced ; one of which, *T. pumilus*, a native of Nepaul, has very large, orange-coloured flowers, which grow on a stem only just rising above the ground.

## GENUS X.

## ERANTHUS, Sal. THE WINTER ACONITE.

*Lin. Syst POLYANDRIA POLYGYNIA.*

**GENERIC CHARACTER.**—*Involucræ situated under the flower, and tubular, with an unequally two-lipped mouth cleft into many segments. Flower sessile. Calyx of from five to eight coloured, petal-like sepals. Petals from six to eight, very short* | *and tubular, with an unequally two-lipped mouth stamens very numerous. Ovaries five or six. Capsules on pedicels in a single row. Seeds globose,*

**DESCRIPTION, &c.**—This genus contains only two species, but one of which is known in British gardens. The name of *Eranthus* signifies “flower of the earth;” because the plants are so dwarf as to seem to repose on the earth when in flower. The principal species was formerly included in the genus *Helleborus*.

## 1.—ERANTHUS HYEMALIS, Sal. THE WINTER ACONITE.

<b>SYNONYM.</b> — <i>Helleborus hyemalis</i> , <i>Linn.</i> ; <i>H. montanus</i> , <i>Moench</i> ;   <b>ENGRAVING</b> —Bot. Mag. t. 3, and our fig. 8 in Plate 7.	<i>Aconitum unifolium</i> , <i>Bauh.</i> ; Winter Wolf’s bane, <i>Parkinson</i> .   <b>SPECIFIC CHARACTER.</b> —Sepals from six to eight, oblong. ( <i>G. Don.</i> )
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**DESCRIPTION, &c.**—If any one will gather a winter aconite, the flowers of which are just now (Feb. 1) beginning to expand in the gardens, it will, on examination, be found to have a broad, green involucræ, consisting of three deeply-cut leaves growing together. On this leafy bed the flower reposes, its outer covering, or calyx, being composed of six oblong, bright yellow sepals, which are delicately marked with parallel lines. At the base of the sepals, and almost hidden in the cup of the flower, lie six or seven little tubular petals, or nectaries, as they were called by Linnaeus, unequal at the mouth, and resembling cornets of paper, but of the same colour as the sepals. There are thirty or forty stamens, with two-celled, adnate anthers; that is, with the filament or stalk firmly fixed to the back of the anther. In the centre of the stamens are five or six oblong carpels, each growing on a short foot-stalk, and each becoming narrower in the upper part, and ending in a gently-curved stigma. When the carpels are ripe, each will be found to contain numerous round seeds, disposed in a single row. The leaves are deeply cut, and the plant has a creeping, underground, tuberous, stem, or rhizoma, which sends up shoots from every bud. Thus, when it is wished to propagate the winter aconite, the suckers must be taken with a portion of the tuberous, underground stem attached to each, as without that they will not grow. From the underground stem sending up shoots from every bud, several winter aconites generally appear above ground at a short distance from each other; and the flower appears yellow as soon as it breaks through the ground, from the calyx or outer covering of the flower-bud being coloured. The same peculiarity of the creeping, underground stem renders it difficult to clear a garden of this plant when it is wished to remove it, as the root must be traced through all its length, and every particle of it taken up, or fresh shoots will continue to spring up. The plant, however, is frequently killed entirely by frost or damp, as it is a native of mountainous places in Lombardy, the north of Italy, and Austria. It, therefore, requires an open, dry situation, exposed to the sun; and though it flowers early in February, or even January, it will not bear much cold. In a warm situation its flowers are much larger and of a brighter colour than in a cold one; and it looks remarkably well in pots or boxes as a window plant. The underground stem should be taken up, when it is to be divided or transplanted, in summer; that is from June, as soon as the leaves have disappeared, to September, but not later, as towards the end of that month

the tuberous stem will begin to put out its fibrous roots. When planted, three or more tubers should be put into the ground to make a cluster, as otherwise the flowers will be too far apart to look well. Alternate patches of winter aconites and snowdrops have a very pretty effect as a border in early spring. The winter aconite was introduced before 1596.

## 2.—*ERANTHUS SIBIRICUS*, Dec. THE SIBERIAN WINTER ACONITE.

SPECIFIC CHARACTER.—Sepals five, oval. (*G. Don.*)

DESCRIPTION, &c.—Though this little plant closely resembles the preceding species in its general appearance, it differs materially in its habits, as it is a native of Siberia, where it is found in moist places. It is thus much more hardy than the common kind; and it is much better adapted for London gardens, which are generally damp and close. This species does not flower till March or April. It was introduced in 1826; but it is very rarely met with.

## GENUS XI.

### *HELLEBORUS*, *Adam.* THE HELLEBORE.

*Linn. Syst.* POLYANDRIA POLYGYNIA.

GENERIC CHARACTER.—Calyx persistent, of five roundish, obtuse, large sepals, which are generally green. Petals from eight to ten, very short, tubular, narrowed in the lower part, nocturnal. Stamens thirty to sixty. Ovaries three to ten. Stigma terminal, orbicular. Capsules conicous. Seeds oval, disposed in two rows, on a linear, double-notched receptacle. (*G. Don.*)

DESCRIPTION, &c.—The species of this genus are perennial plants, with a very disagreeable smell, and of a leathery texture. They are furnished with a creeping, underground stem, less fleshy than that of the winter aconite, but in other respects of the same nature; and they have an ornamental calyx, as is the case with that plant. The species vary considerably in their habits, but all are poisonous when taken to excess, though in small quantities they are found useful. The name of *Helleborus* alludes to their poisonous qualities, as it signifies “deadly food.” The fibrous roots only are used in medicine.

## 1.—*HELLEBORUS NIGER*, *Linn.* THE BLACK HELLEBORE, OR CHRISTMAS ROSE.

ENGRAVINGS.—Bot. Mag. t. 8, Swt. Bot. Flow. Gard. 2d Ser. t. 186, and our *fig.* 1 in Plate 7. SPECIFIC CHARACTER.—Radical leaves pedate, quite smooth, scape leafless, bearing one or two flowers and bracts. (*G. Don.*)

DESCRIPTION, &c.—Every one knows that first harbinger of spring, the Christmas rose, though but few people are aware how very well it looks as a window plant. In the open air, the delicate texture of its flowers is often injured by the frost, or melting snow, which so often covers the ground at the dreary season when it appears; but when kept in a sheltered place, such as in a room or in a greenhouse, it becomes a very ornamental plant. The calyx of the Christmas rose consists of five large, white sepals, which are delicately tinged with pink. The petals are small and tubular, like those of the winter aconite; but they are even less ornamental than in that plant, as they are of a dingy green. They, are, however, but little seen, as they are nearly hidden by the numerous stamens which surround the eight or ten carpels that grow erect and close together in the centre of the flower. The involucrum consists of two large bracts, which shade the flower in the bud, so as to resemble a green









calyx. The leaves are very deeply cut, and the segments are disposed in a palmate manner, so as to look like separate leaflets. The species takes its name from the black bark of its underground stem. It is a native of the Apennines, whence it was introduced before 1596. It will grow in any soil or situation; but it prefers a dry soil, and a situation open to the sun. It is propagated by dividing the underground stem in summer, after the leaves have decayed. There are three kinds of Christmas rose: the species which has broad leaves, and is the most common; a variety with narrow leaves, which is sometimes called *Helleborus niger angustifolius*; and the third, which is figured in Sweet's British Flower Garden, and called there *H. n. rernalis*, and which does not flower till February or March.

#### 2.—*HELLEBORUS VIRIDIS*, Lin. THE GREEN HELLEBORE.

ENGRAVINGS.—Eng. Bot. t. 200; 2d ed. t. 800.

SPECIFIC CHARACTER.—Radical leaves very smooth, entire ones almost sessile, palmate; peduncles generally bifid; sepals roundish, ovate, green. (G. Don.)

DESCRIPTION, &c.—This plant differs considerably from the Christmas rose, not only in the colour of its flowers, which are green, but in its leafy stems, in the slender lobes of its leaves, which are sharply serrated, and in its carpels, of which there are only three, adhering together—while in the Christmas rose the flower-stem is devoid of leaves, except the involucral bracts, and there are eight or ten carpels which are quite distinct. The green hellebore is rather ornamental, notwithstanding the colour of its flowers. This species is a native of England, and of various parts of France, Italy, and Germany, where it is generally found in woods and thickets, growing in a chalky soil. It is often cultivated in gardens, and it looks exceedingly well in shrubberies, as it grows from a foot and a half to two feet high; but it has a disagreeable smell like that of elder-flowers. It is propagated by seeds, or by division of the root.

#### 3.—*HELLEBORUS ODORUS*, Walds. et Kit. THE SWEET-SCENTED HELLEBORE.

ENGRAVINGS.—Bot. Reg. t. 1643; and our fig. 3 in Plate 7.

SPECIFIC CHARACTER.—Radical leaves palmate, pubescent on the under surface; segments oblong, undivided, quite entire at the base, but serrated at the apex. Stem bifid. Sepals ovate-oblong, acutish, green.

DESCRIPTION, &c.—This species bears considerable resemblance to *H. viridis*, but the flowers are larger and handsomer; the leaves are broad and glossy, and the plant has an agreeable fragrance. It is a native of Hungary, whence it was introduced about 1830. It is quite hardy, and appears to grow freely in any soil; but it is said to thrive best in peat.

#### 4.—*HELLEBORUS PURPURASCENS*, Walds. et Kit. THE PURPLISH HELLEBORE, OR BEAR'S-FOOT.

ENGRAVING.—Swt. Brit. Flow. Gard., 2d Ser. t. 142.

SPECIFIC CHARACTER.—Radical leaves pubescent on the under surface, palmate, with the segments cuneated at the base, and from three to five-lobed at the apex; stem two-flowered, floral leaf almost sessile; sepals roundish, coloured. (G. Don.)

DESCRIPTION, &c.—This species is a native of Hungary, and it is said there to have handsome purple flowers: those of the specimen figured in Sweet are, however, of so dingy a hue as to be not at all ornamental. The plant was introduced in 1817; but it is very rarely to be met with. There is a variety, *H. p. Bocconi*, which is sometimes called a distinct species; but the principal difference consists in the stem being longer than the leaves.

5.—HELLEBORUS ATRO-RUBENS, *Walds. et Kit.* THE DARK PURPLE HELLEBORE.

**SPECIFIC CHARACTER.**—Radical leaves very smooth, pedate, palmately divided; | somewhat angular, bifidly branched; sepals roundish, coloured. (*G. and Don.*)

**DESCRIPTION, &c.**—This species is said to have rich dark purple flowers, becoming almost black at the margins of the sepals. It is a native of Hungary, where it grows in woods, and whence it was introduced in 1820. It is probably only a variety of the preceding species.

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6.—HELLEBORUS DUMETORUM, *Walds. et Kit.* THE THICKET HELLEBORE.

ENGRAVING.—Swt. Brit. Flow. Gard., t. 109.

**DESCRIPTION, &c.**—A dwarf plant with green flowers, which have no pretensions to beauty, and which differ from the other species in having their sepals far apart. It flowers in March. The species is a native of Hungary, whence it was introduced in 1817; and it is propagated by dividing the root.

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7.—HELLEBORUS FETIDUS, *Lin.* THE FETID HELLEBORE.

ENGRAVINGS.—Eng. Bot., t. 613.

**SPECIFIC CHARACTER.**—Stem many-flowered, leafy; leaves pedate, very smooth; segments oblong-linear. (*G. Don.*)

**DESCRIPTION, &c.**—An evergreen plant with green flowers, which never fully expand, but remain in a globular form, with a strong purple margin to the sepals. The petioles, or leaf-stalks, are dilated so as to resemble leaves, and the real leaves appear like little fans stuck on the tip. It is a native of England, and grows abundantly in chalky soils, in thickets and waste places.

8.—HELLEBORUS LIVIDUS, *Ait.* THE LIVID HELLEBORE.

**SYNONYMES.**—*H. argutifolius*, *Vir.*; *H. tritobus*, *Mill.*

**ENGRAVINGS.**—Bot. Mag. t. 72; and our fig. 2 in Plate 7.

**SPECIFIC CHARACTER.**—Stem many-flowered, leafy; leaves ternate, very smooth, glaucous on the under surface; segments ovate, lanceolate. (*G. Don.*)

**DESCRIPTION, &c.**—This is an evergreen plant with pinkish flowers, which appear in February, and which are more ornamental than those of any other species, except the Christmas rose. The leaves are in three leaflets, which are serrated on the margin, and those of the stem have sometimes a dilated, leaf-like petiole, as in *H. foetidus*. The species is a native of Corsica, whence it was introduced in 1710; and it requires a little protection during severe winters. It is also difficult to propagate, as it has not the creeping, underground stem, common to the genus, and it rarely ripens seeds. There is a variety which has the margins of the leaflets entire.

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## OTHER SPECIES OF HELLEBORUS.

The most remarkable is *H. orientalis*, the Hellebore of the ancients, which has not yet been introduced.

## GENUS XII.

COPTIS, *Sal.* THE COPTIS, OR AMERICAN HELLEBORE.*Lin. Syst.* POLYANDRIA POLYGYNIA.

**GENERIC CHARACTER.**—Calyx of five or six petal-like, deciduous sepals. Petals small, cucullate. Stamens from twenty to twenty-five. Capsules from six to ten, on long stalks, somewhat membranous, four—six-seeded, pointed with the style, stellately disposed. (*G. Don.*)

**DESCRIPTION, &c.**—There are only two species in this genus, which has been separated from Helleborus on account of the capsules being membranaceous, and on foot-stalks, and the calyx falling off soon after its expansion ; while in all the species of Hellebore the capsules are leathery and without foot-stalks, and the sepals remain on till the seeds are nearly ripe. The name of Coptis signifies cut, in allusion to the numerous divisions of the leaves.

1.—COPTIS TRIFOLIA, *Sal.* THE THREE-LEAVED COPTIS.SYNONYMS.—*Helleborus trifolatus*, *Lin.* ; *Anemone Greenlandica*, *Oed.*ENGRAVINGS.—Lodd. Bot. Cab. t. 173 ; and our *fig. 7* in Plate 7.

**DESCRIPTION, &c.**—A pretty little plant with white flowers, and yellow roots. It is called Tissavoya-ne-jaune by the French in Canada, of which country it is a native, as well as of other parts of North America, and Iceland, Norway, Siberia, and Kamtschatka. The leaves and stalks are used to dye yellow. It was introduced in 1782 ; and it flowers from April to July. It should be grown in peat, and it is increased by dividing the roots. After the sepals drop, the capsules fall back so as to form a kind of star.

2.—COPTIS ASPLENIIFOLIA, *Sal.* THE FERN-LEAVED COPTIS.SYNONYME.—*Thalictrum japonicum*, *Thunb.***SPECIFIC CHARACTER.**—Leaves biinate ; leaflets rather pinnatifid, very acutely serrated ; scape two-flowered (*G. Don.*)

**DESCRIPTION, &c.**—The leaves have very much the appearance of that elegant fern called spleenwort. The flowers are white, and longer than those of the preceding species. It is found wild in California, and also in Japan. It was introduced in 1827.

## GENUS XIII.

ISOPYRUM, *Lin.* THE ISOPYRUM.*Lin. Syst.* POLYANDRIA POLYGYNIA.

**GENERIC CHARACTER.**—Calyx of five petal-like, deciduous sepals. Petals five, equal, tubular, two-lipped, with the outer lip bifid. Stamens fifteen to twenty. Ovaries from two to twenty. Style longitudinally stigmatose on the inside. Capsules sessile, one-celled, oblong, compressed, membranous, many-seeded. Seeds minute, dotted. (*G. Don.*)

**DESCRIPTION, &c.**—The name of Isopyrum signifies, equal to wheat ; but why it has been applied to the present genus it is hard to say. The species are pretty little herbaceous plants, with white flowers and much-divided leaves.

1.—*ISOPYRUM GRANDIFLORUM*, *Fisch.* THE LARGE-FLOWERED ISOPYRUM.

ENGRAVING.—Our fig. 6 in Plate 7.

SPECIFIC CHARACTER.—Capsules five; leaves biinate, leaflets wedge-shaped; three-toothed at the apex, or divided into three linear-oblong lobes. Petals emarginate; sub-tubular at the base.

DESCRIPTION, &c.—This pretty little plant grows in tufts on several of the mountains in Nepaul, where it flowers in July. The stem is extremely short, and it divides just above the ground into several short branches; the stem and branches being both hidden by a mass of the dry petioles of former years, which have the appearance of a cluster of dry brown bracts. The leaves are in threes, each leaflet being again divided into three smaller ones. The flowers have five white sepals, and five small petals, which are notched at the tip, and somewhat tubular at the base. The stamens are numerous, and there are five oblong ovaries, which are five or six-seeded. Professor Royle tells us that the flowers are sometimes four times as large as those represented in Plate 7. The species is quite hardy in British gardens, and it will thrive in any light garden soil. It is increased by dividing the roots. It was introduced in 1801; and though it is seldom met with, it is well deserving of cultivation.

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2.—*ISOPYRUM MICROPHYLLUM*, *Royle.* THE SMALL-LEAVED ISOPYRUM.

SPECIFIC CHARACTER.—Capsules five. Leaves ternate. Leaflets shaped at the base, and trifid at the apex. Petals emarginate. Sepals very finely cut into numerous segments, which are somewhat wedge-shaped, and trifid at the apex. Petals emarginate. Sepals oblong-ovate.

DESCRIPTION, &c.—“The root of this species,” says Dr. Royle, “is perennial, long, cylindrical, and stem-like, insinuating itself between the crevices of the rocks: at the apex it divides, like the former species, into several little tufts of leaves, from the centre of which rises the very simple stem, and single-flowered scape. The petioles are long, dilated, membranous, or as if winged at the base; and the leaves are most delicately divided, being supradecompound, with ternate subdivisions.” (*Royle, Illustr. Bot. of the Himalayas.*) The species is very pretty, and very well adapted for rock-work. It will grow in any light soil, but it prefers one that is poor and stony.

3.—*ISOPYRUM THALICTROIDES*, *Linn.* THE THALICTRUM-LIKE ISOPYRUM.SYNONYMS.—*I. aquilegoides*, *Jacq.* *I. thalictroides*, *Sat.*; what compressed, awned with the elongated styles. Sepals blunt.  
*Helleborus thalictroides*, *Lamb.* Root creeping, fascicled, grumose. Leaf-stalks dilated at the base into

SPECIFIC CHARACTER.—Capsules from one to three, ovate, some- membranous auricles.

DESCRIPTION, &c.—The flowers of this species are small and white, and the leaves much longer than those of the other kinds. It is a native of the Pyrenees, the Apennines, and other mountains in central Europe. It was introduced in 1759, and will grow in any common garden soil, but it is not worth cultivating.

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GENUS XIV.AQUILEGIA, *Tourn.* THE COLUMBINE.*Lin. Syst POLYANDRIA POLYGYNIA.*GENERIC CHARACTER.—Calyx of five-coloured, petal-like, deciduous sepals. Petals five, gaping above, two-lipped, outer lip large, flat; inner lip very small, each petal drawn out into a hollow spur, which is callous at the apex, and protruding between the sepals. Capsules five, erect, many-seeded, pointed with the styles. (*G. Don.*)

DESCRIPTION, &c.—The Columbine is so common a flower, that few people notice the peculiarities of its construction. The sepals and petals appear of equal importance, and certainly of equal beauty; but yet they

are perfectly distinct from each other, and they are so different in form as to be easily distinguishable. The sepals are shaped like an oval leaf, tapering to a point, and are attached by a kind of stalk to the disk of the flower; while the petals, which are horn-shaped, pass between them, being slightly attached to the disk by part of the mouth of the horn, and having the spur raised far above it; so that the spurs of the five petals form a kind of crown round the flower-stalk. The name of *Aquilegia* is derived from *Aquila*, an eagle, and alludes to the bird-like appearance of a petal when detached, with two of the sepals adhering to it, which resemble wings. The English word Columbine is derived from the Latin word *Columba*, a dove, and alludes to the same appearance. There are numerous stamens, and those of the inner row are abortive, being without anthers, and growing together so as to form a membranous cover to the five carpels or incipient seed-vessels in the centre of the flower. The sepals and petals fall off, and the seed-vessels become brown and leathery, opening at the top to discharge the numerous seeds. These seed-vessels have only one valve, and are of the kind called follicles. The leaves, which spring from the root, are bi-ternate, with bluntnish segments, which are somewhat toothed, but those on the stem are divided into linear lobes. The stem is total and erect, and it bears numerous flowers.

### 1.—*AQUILEGIA VULGARIS*, *Lin.* THE COMMON COLUMBINE.

ENGRAVINGS.—Eng. Bot. t. 297; 2d edit. t. 770.

VARIETIES.—These are numerous, as regards the colour and doubletess of the flowers. The following are the most distinct. A. v. 2 *alpina*, *Huds.* Stem usually one-flowered. Spur less curved than in the species. Found at Matlock. A. v. 3 *corniculata*, *Dec.* Flower double; petals spurred; spurs drawn downwards. A. v. 4

*inversa*, *Dec.* Flower double; spurs inverted. A. v. 5 *stellata*, *Dec.* Flower double; petals flat and spurless, coloured. A. v. 6 *degener*, *Dec.* Flower double; sepals and petals flat and spurless, green.

SPECIFIC CHARACTER.—Spur incurved; carpels villous; stem leafy, many-flowered. Style not longer than the stamens.

DESCRIPTION, &c.—This species is a native of Britain, and it is generally found growing in sandy loam, and flowering from May to July. It grows from one foot to two feet high, according to the depth of the soil, and the flowers are of a deep livid purple, or very dark blue, varying, however, occasionally to pinkish or almost white, particularly in the double flowers. Some of the varieties are streaked, and some spotted, or blotched; but these are always pink and white. In the species and all the varieties, both sepals and petals are of the same colour. The leaves are bi-ternate, and of a bluish green. The Columbine is not only found wild in Britain, but in most parts of Europe; and in some parts of Asia, particularly in Japan. It is always found in meadows or thickets, and never on dry hills. It is of the easiest culture, only requiring not to be kept too dry; and it is propagated either by seeds or by division of the root. It does not increase rapidly, and seldom requires taking up to reduce in size; the young plants which appear in a border where columbines grow, are generally seedlings and not suckers; and they may be prevented from appearing by cutting off the flowers as soon as they begin to fade, and thus preventing the ripening of the seeds. Each flower has five or more carpels, or follicles, as they are called when ripe, each of which contains numerous seeds. When seedlings are to be raised, the seeds should be sown as soon as ripe.

### 2.—*AQUILEGIA ATRO-PURPUREA*, *Willd.* THE BROWNISH-PURPLE COLUMBINE.

SYNONYMS.—*A. Davurica*, *Dec.*; *A. Dahurica*, *Link.*; *A. viridis*, *flora*, var. *Hart.*

VARIETIES.—*A. a. 1 brevistyta*, *Willd.* Style not so long as the stamens; *A. a. 2 Dahurica*, *Dec.* Styles protruding beyond the rest

of the flower, leaves smooth; *A. a. 3 Fisheriana*, *Dec.* Styles projecting, leaves downy.

ENGRAVINGS.—Bot. Reg. t. 922; and our fig. 8 in Plate 8.

SPECIFIC CHARACTER.—Spur erect, straight, equal to the limb. Styles sometimes exerted. Sepals longer and paler than the petals.

DESCRIPTION, &c.—A beautiful little plant, which grows freely in any light soil, and flowers from April till June. It differs from the common Columbine in the spurs being erect, and quite straight; and in the colour,

which is a rich brownish purple, with a dark morone tinge very different from the livid hue of the common wild species. It is also a smaller plant, scarcely ever exceeding a foot in height. It is a native of Siberia, whence it was introduced by seeds about 1824. It is quite hardy, and may be propagated either by seeds sown as soon as ripe, or by division of the roots in autumn.

### 3.—*AQUILEGIA ALPINA*, *Lin.* THE ALPINE COLUMBINE.

**VARIETY.**—A. a. 2 grandiflora, *Dec.* Flowers very large.

**ENGRAVINGS.**—Lodd. Bot. Cab. t. 657; Swt. Brit. Flow. Gard. t. 218.

**SPECIFIC CHARACTER.**—Spurs erect, nearly straight; lower limb

emarginate, upper limb very long. Sepals roundish, with a tip at the apex, and a long, very narrow footstalk. Leaves bi ternate, leaflets lobed, and much divided.

**DESCRIPTION, &c.**—This showy Columbine has very large flowers, which are of a deep Mazarine blue, with the exception of the lower lip of the petals, and the tip of the large roundish sepals, both of which are whitish. The leaves are bi ternate; and the leaflets, which are small, are very much cut. The carpels have very short styles. This species is a native of Switzerland, whence it was introduced in 1731; but though it has been so long in the country, it is very seldom seen, probably because it is rather difficult to cultivate. It likes an open situation, and a loamy soil.

### 4.—*AQUILEGIA GARNIERIANA*, *Swt.* THE MISSES GARNIER'S COLUMBINE.

**ENGRAVINGS.**—Swt. Brit. Flow. Gard., 2d Ser. t. 103; and our fig. 6 in Plate 8.

**SPECIFIC CHARACTER.**—Sepals unequal in size, broadly ovate, hairy on the outside. Petals five, lengthened into a long spur at the base, which

is involute, and terminates in a glossy knob, two-lipped, inner lip almost obsolete, and terminating in a hollow callosity; outer lip erect, and spatulate. Stamens numerous, unequal in length; filaments smooth, connected in sets at the base.

**DESCRIPTION, &c.**—This very beautiful Columbine is a hybrid, between *A. sibirica* and *A. vulgaris*, which was raised by the Misses Garnier of Wickham in Hampshire; where these ladies have one of the most perfect gardens I have ever seen, as regards its flowers. Many fine gardens have their effect destroyed by withered roses and other flowers being suffered to remain on after their beauty is quite gone; but the garden of the Misses Garnier was perfect in this respect. Not a single withered flower was to be found; and as every plant was so skilfully managed as to be covered with flowers in its proper season, the whole reminded me of the trees loaded with gems in the Arabian tales, or the enchanted gardens of Armida.

In *Aquilegia Garneriana* the sepals are oval, with a short footstalk, and they are of a rich purple, tinged with green at the tip. The petals are horn-shaped, with a purple tube, and a pale yellow mouth. The plant is quite hardy, and will grow in any common garden soil. It is propagated by division of the root.

### 5.—*AQUILEGIA SIBIRICA*, *Lam.* THE SIBERIAN COLUMBINE.

**ENGRAVINGS.**—Swt. Brit. Flow. Gard., 2d Ser. t. 90; and our fig. 5 in Plate 8.

**SPECIFIC CHARACTER.**—Spurs of the petals involute at the apex, much longer than the lip. Sepals elliptic-oblong, obtuse. Capsules

very smooth. Stem many-flowered. Root leaves bi ternate, stem-leaves ternate; leaflets sub-trilobed, obtusely toothed. Petioles slightly hairy.

**DESCRIPTION, &c.**—This species has flowers of an intensely bright blue, and both the sepals and the petals are tipped with white. The sepals are narrow and oblong; and the petals have a very long spur, curiously curled round at the tip. The anthers are of a bright golden yellow, and the leaves broader and less glaucous than in most of the other species. The species is quite hardy; but it flowers best in loamy soil mixed with sand, and enriched with vegetable mould. It may be propagated by division of the roots, or by seed, which it produces freely.









6.—*AQUILEGIA GLANDULOSA*, *Fisch.* THE GLANDULOUS OR RUSSIAN COLUMBINE.

VARIETIES.—A. g. 1 *discolor*, *Dec.* Flowers two-coloured.—A. g. 2 *concolor*, *Dec.* Flowers one-coloured.

ENGRAVINGS.—*Swt. Brit. Flow. Gard.* 2d ser. t. 55; *Botanist*, t. 219; and our *fig. 2* in Plate 8.

SPECIFIC CHARACTER.—Spurs of the petals much shorter than the limb. Sepals very broad, stalked. Carpels and stem covered with glandulous hairs.

DESCRIPTION, &c.—The flowers of this Columbine far exceed in size those of any of the other species, as they are frequently found to measure four inches across. The sepals are very large, nearly oval, and furnished with a long footstalk; they are of a very dark blue, without the mixture of any other colour. The petals have a very short spur, and a very large upper lip, which is white, the tubular part being of a deep blue. The leaves are biennial, the leaflets having numerous lobes. This plant is apt to be much injured by wet; it should therefore be planted in a dry border of light soil. It is best propagated by seeds, which should be sown as soon as they are ripe. The young plants may be left in the seed-bed till the second spring, when about February or March they should be removed to a bed prepared for them of sandy loam, enriched with leaf-mould, in which they should be planted a foot apart. Thus treated, they will flower superbly in May or June, generally in the latter month; and will form one of the most splendid border-flowers that can be imagined. There is a variety with the flowers white.

7.—*AQUILEGIA GLAUCA*, *Lindl.* THE GLAUCOUS COLUMBINE.

ENGRAVINGS.—*Bot. Reg.* 1840, t. 46; and our *fig. 3* in Plate 8.

SPECIFIC CHARACTER.—Spurs short, erect, straight; limb large, truncate; sepals ovate-lanceolate, smaller than the limb of the petals.

Stamens and styles not exerted. Ovaries shaggy, with glandular hairs; styles long, involute. Leaves small, very glaucous.

DESCRIPTION, &c.—This species has large and very fragrant flowers, which are cream-coloured, with a slight tinge of pink on the spurs. The stems are red, and the leaves sea-green. The species is a native of the Himalayas, and it was introduced by seeds in 1839. Its stem grows about two feet high, and its flowers appear in May and June. It will grow in any good garden-soil, as it is quite hardy; and it is propagated by seeds, or by division of the root in autumn, or in spring if not later than the middle of March. As this Columbine is not mentioned by Drs. Royle and Wallich, Dr. Lindley observes that it may possibly "be considered by these excellent botanists as a variety of their *A. pubiflora*;" but Dr. Lindley himself thinks it quite distinct from that species, as it has "larger and sweet-scented straw-coloured flowers," nearly smooth stems, very glaucous leaves, and shaggy seed-vessels.

8.—*AQUILEGIA FRAGRANS*, *Benth.* THE FRAGRANT COLUMBINE.

ENGRAVINGS.—*Botanist*, t. 181; and our *fig. 4* in Plate 8.

SPECIFIC CHARACTER.—Stem leafy. Segments of the lower leaves

trifid. Flowers numerous, somewhat downy. Sepals ovate-lanceolate, acute. Spur of the petals incurved, much shorter than the limb.

DESCRIPTION, &c.—This very beautiful Indian Columbine is very nearly allied to *A. glauca*, but it differs from that species in having the spurs of the petals much shorter, and strongly curved inwards; while those of *A. glauca* stand erect, and are quite straight. The leaves of *A. fragrans* are also not at all glaucous. The flower is very large, and delightfully fragrant. The species was introduced in 1840, and as it is a native of the north of India, it appears likely to prove quite hardy in our gardens. It is propagated in the usual way, by seeds or division of the root.

9.—*AQUILEGIA HYBRIDA*, Sims. THE HYBRID COLUMBINE.

**SYNONYMS.**—*A. vulgaris*, var. *speciosa*, *Ait.*; *A. bicolor*, *Ehrh.*; *A. sibirica*, *Don.*

**ENGRAVING.**—Bot. Mag. 1221.

**SPECIFIC CHARACTER.**—Spurs of the petals incurved, much longer than the limb. Leaves slightly pubescent.

**DESCRIPTION, &c.**—This beautiful hybrid is said to have been raised between *A. vulgaris* and *A. canadensis*. The flowers are exceedingly handsome, the sepals being of the dark, livid colour of the common Columbine, and the petals with a clear white limb, deepening into dark blue in the spur. The leaves have not the purplish hue of those of *A. canadensis*, and they are much more pubescent, feeling very soft on both sides. This kind of Columbine was first seen in British gardens in 1809, but whether it be a true hybrid or a species, appears very doubtful. It is generally propagated by division of the root, but it is said also to come true from seed.

10.—*AQUILEGIA CANADENSIS*, Linn. THE CANADIAN COLUMBINE.

**SYNONYMS.**—*A. pumila*, *Corn.*; *A. parviflora*, *Moris.*; The early red Columbine of Virginia, *Park*

**ENGRAVINGS.**—Bot. Mag. t. 246; and our fig. 7 in Plate 8.

**SPECIFIC CHARACTER.**—Spurs of the petals erect, straight, much longer than the limb, stamens considerably exserted, follicles smooth.

**DESCRIPTION, &c.**—This very curious Columbine was introduced from Virginia about 1640, by Mr. John Tradescant, son of the gardener of Charles I. The flowers are scarlet and orange, and there are two bracts on each pedicel, which grow so near the flower as to have almost the appearance of a distinct green calyx, and is said in its native country never to be above nine inches high, but in this country it generally attains the same size as the common Columbine. It is quite hardy in British gardens, and it may be easily propagated by dividing its roots in autumn or spring; or it may be raised from seeds, which it ripens in great abundance; but in the latter case, the seeds should be sown as soon as ripe, as otherwise they will be a long time before they come up.

11.—*AQUILEGIA SKINNERII*, Hook. MR. SKINNER'S COLUMBINE.

**SYNONYMS.**—*Aquilegia mexicana*, *Dec.*; The Mexican Columbine. | spreading, and five times longer than the limb. Sepals lanceolate, | ENGRAVINGS.—Bot. Mag. t. 3919; and our fig. 1 in Plate 8. | twice as long as the limb of the petals; stamens very long, exserted; | **SPECIFIC CHARACTER.**—The whole plant is glabrous. Spurs straight, | styles three, rarely five.

**DESCRIPTION, &c.**—The flowers of this species are easily distinguished by the great length of their spurs, which are frequently nearly two inches long; and by their stamens, which are very numerous, and much protruded. There are generally only three styles. The flowers are drooping, but when the seeds begin to swell, the flower-stalks which bear them become quite erect, as in the other species. The follicles of *A. Skinnerii* have broad, membranous, crisped wings. This magnificent Columbine was sent to Woburn Abbey in 1840, by G. H. Skinner, Esq., from Guatemala; so that its native place is much farther South than that of any other species yet introduced. Sir W. J. Hooker informs us that *A. Skinnerii* "proves to be perfectly hardy, having survived the severe winters of 1840-41 in the open ground at Woburn, and flowering in great beauty during the summer of 1841."

OTHER SPECIES OF *AQUILEGIA*.

These are numerous, but the most beautiful is said to be the *A. caerulea* of Dr. Torrey, described as *A. macrantha* by Drs. Hooker and Arnott, in Beechey's Voyage; which does not appear to have been yet introduced. *A. formosa* is also a very handsome species, nearly allied to *A. canadensis*.

## GENUS XV.

DELPHINIUM, *Tourn.* THE LARKSPUR.*Linn. Syst.* POLYANDRIA TRIGYNIA

**GENERIC CHARACTER**—Calyx deciduous, petal-like, irregular, with the upper sepal drawn out below into a spur. Petals four, two upper ones drawn out at the base into appendages within the spur. (*G. Don*)

**DESCRIPTION, &c.**—The flower of the Larkspur exhibits some of those strange anomalies in its construction which are so often found in plants belonging to the order Ranunculaceæ. The calyx and the corolla are confounded together; or rather, the calyx is the most ornamental part, while the petals are so small and so obscurely placed as to appear of little consequence. The plants are generally tall and showy-looking, with the flowers disposed in a long terminal raceme. The leaves are generally deeply cut, particularly the lower ones. The species are annual and perennial plants, natives of temperate climates, and all quite hardy in British gardens. The flowers are always blue, red, or purple, or of some shade or combination of these colours mixed with white, but they are never yellow. The name of Delphinium, which is derived from the Greek word for Dolphin, and the English name of Larkspur, both allude to the shape of the flower, which is very singular, from its projecting spur. The genus being a very large one, it is divided into sections, the first two of which contain only annual plants, and have the tail or appendage of only one petal in the spur; while the other sections, which contain no annuals, have the appendages of two petals in the spur. In one of these, *Delphinastrum*, the species are all perennials, and the flowers have their petals more or less bearded; this section is divided into the Siberian Larkspurs, and the Bee Larkspurs. The other section, *Staphisagria*, consists of biennials, which have the petals not bearded, and the carpels ventricose. There are only three species in this division. The leaves of the Larkspur are poisonous, and it is said that no insects will touch them.

## SECTION DELPHINASTRUM.

## § 1. SIBERIAN LARKSPURS—LIMB OF THE LOWER PETALS ENTIRE.

I.—DELPHINIUM GRANDIFLORUM, *Dec.* THE LARGE-FLOWERED LARKSPUR.

**SYNONYMS.**—*D. vngatum*, *Jacq.*

**ENGRAVINGS.**—Bot. Mag. t. 1686, of the species; and of the variety, Bot. Reg. t. 472; Lodd. Bot. Cib. t. 71 and on fig. 1 in Plat. 10.

**VARIETIES.**—*D. g.* 2 *chincense*, *Fisch.*; *D. chincensis*, *Lodd.* *D. sinense*, fl.-pl. *Plat. Mag. of Bot.* 7, p. 171. This is the variety represented in our figure. It is taller and stiffer than the species, and when raised from seed it generally flowers the first year.—*D. g.*

3 *album*, *G. Don*. Flowers white.—*D. g.* 4 *flor pleno*, *G. Don*. Flowers double.—*D. g.* 5 *Fischieri*, *Riech.* Flowers pinkish.

**SPECIFIC CHARACTER.**—Leaves palmately many-petaled into distinct linear lobes; pedicels longer than the bracts; petals shorter than the calyx, two lower ones somewhat orbicular, with obliquely inflexed entire borders, racemes spreading, few-flowered, diverging.

**DESCRIPTION, &c.**—This is a very showy kind of Larkspur, and it has the advantage of flowering from June to September. It is a native of Siberia, and it was introduced in 1816. The flowers are very large; and the sepals are of an intense blue spotted with dull red, the outer spur being greenish. The petals are much darker, two of them are very small, upright, and fleshy; and the two others are nearly round, with an oblique claw, having a small hook at the base, near which is a slightly-bearded yellow spot. The blue of the flower is of an

intense metallic hue, and, as the petals are so disposed as to hide the stamens, nothing is seen to contrast with the blue but the golden yellow spot on each petal. The double-flowered varieties are particularly handsome. The Chinese variety differs chiefly in having a very stiff, erect stem; and when raised from seed, it frequently flowers the first year. All the kinds are hardy, and are propagated by seeds or division of the root.

## 2.—DELPHINIUM CHEILANTHUM, *Fisch.* THE LIP-FLOWERED LARKSPUR.

**SYNONYMS.**—*D. davuricum*, *Stev.*; *D. hisutum*, *Gruel.*. Dots-

mask Larkspur; Hairy-leaved Larkspur.

**ENGRAVINGS.**—Bot. Reg. t. 473, of the species; and Swt. Brit. Flow. Gard. 2d ser. t. 309, of the variety.

**VARIETY.**—*D. C. 2 multiplex*, *D. Don.* Flowers double.

**SPECIFIC CHARACTER.**—Stem erect, branched. Leaves 3—5-parted, with oblong, acuminate, sub trifid, and somewhat toothed lobes. Petals shorter than the calyx, two lower ones with obliquely-reflexed, ovate, entire limbs. Capsules reticulately pained, pubescent. (*G. Don.*)

**DESCRIPTION, &c.**—This species is easily distinguished by its dwarf habit of growth, and by its having leaves which are of a dark blackish green. The flowers are very handsome, from the contrast between the light blue of the sepals, and the dark purplish hue of the petals. The plant takes its specific name from the lower petals, which are much larger than the others, and form a kind of projecting, or drooping lip. The limb of these petals is not decidedly entire as that of *D. grandiflora*, but it is slightly notched, and the stamens are partly visible. The variety is very showy, from the large size and intense colour of its very double flowers. The species is a native of Siberia, whence it was introduced in 1819. Both the species and variety require a mixture of peat in the soil in which they are grown. They are generally propagated by division of the root; or if by seeds, they should be sown as soon as ripe. These plants generally flower from June to September.

## § II. BEE LARKSPURS—LIMB OF THE LOWER PETALS TWO-CLEFT.

### 3.—DELPHINIUM PUNICEUM, *Pall.* THE CRIMSON DELPHINIUM.

**ENGRAVING.**—Floral Cabinet, vol. i. p. 13.

stem-sheathing at the base. Flowers small, pubescent on the outside,

**SPECIFIC CHARACTER.**—Leaves many-parted, or cleft to the base, so as to be divided into three long linear lobes; petioles dilated, and

spur short, truncated. Raceme elongated.

**DESCRIPTION, &c.**—This species, which is a native of Tartary, is said to have been introduced in 1785; but it was soon lost, and was not re-introduced till 1835. It is a native of the dry plains of Tartary, where it was found by the Russian traveller Pallas, by whom it was first described. It is quite hardy, but it should be grown in sandy soil, in a perfectly dry situation, as it is easily killed by damp. It is generally propagated by seeds, which it ripens freely; if increased by dividing the root, the operation should be performed in spring, when the young shoots are two or three inches above the ground. The specific name *puniceum*, which signifies crimson, is very ill applied to this species, as the flowers are of a rich dark purple. The flowers are generally produced in July and August.

### 4.—DELPHINIUM MENZIESII, *Dec.* MR. MENZIES' LARKSPUR.

**SYNONYM.**—*D. tuberosum*, *Menz.*

**SPECIFIC CHARACTER.**—Leaves five-parted, with trifid, linear, entire

**ENGRAVINGS.**—Bot. Reg. t. 1192; and our fig. 4 in Plate 9.

lobes; petioles slightly dilated at the base. Bracts trifid. Roots  
gumose.

**DESCRIPTION, &c.**—This species is a native of the north-west coast of North America, where it was first found by the late Mr. Menzies, and whence seeds were sent home by Mr. Douglas in 1826. It is a dwarf









plant, with large dark purple flowers, and a tuberous root. The stem is very little branched, and the leaves are deeply cut into five divisions, each of which is again divided into three long, narrow lobes. The species flowers in June and July; it is quite hardy, and will grow readily in any common garden-soil. It is propagated by division of the root.

### 5.—DELPHINIUM BARLOWII, *Hort.* MR. BARLOW'S LARKSPUR.

**SYNONYMS.**—*D. elegans*, 2 *multiplex*; *D. Phoeniceum*, *Hort.*

**ENGRAVINGS.**—Bot. Reg. t. 1944; Paxt. Mag. of Bot. and Gard. vol. v. p. 263; and our *fig.* 1 in Plate 9.

**DESCRIPTION, &c.**—This plant appears to be a hybrid, raised by a florist of the name of Barlow, near Manchester, between *D. grandiflorum* and *D. elatum*; though some botanists suppose it to be a variety of *D. elegans*. Whatever may be the origin of this Larkspur, it is certainly the most beautiful of the genus; as it is impossible to conceive a richer or more intense blue than is exhibited by its flowers, particularly when illuminated by the rays of the sun. The flowers are large, and very double; and they are produced in the greatest abundance on an erect branched raceme, so as to form a splendid pyramid of flowers. The stem is very strong, and much branched; and it is said to grow seven or eight feet high. Mr. Loudon and myself saw some plants above six feet high in the garden of the Misses Garnier, at Wickham, Hants; and frequently in other places about five feet high; always flowering luxuriantly, and with large, very handsome leaves. It will grow in any soil and situation; but it flourishes most in deep, rich mould, backed, but not shaded, by trees. If planted in a poor, dry soil, it is much smaller; and if in an exposed situation, it is liable to be broken by high winds. It will continue to flower all the summer and autumn.

### 6.—DELPHINIUM VIMINEUM, *D. Don.* THE TWIGGY LARKSPUR.

**ENGRAVINGS.**—Swt. Brit. Flow. Gard. 2d ser t. 371; Bot. Mag. t. 3593; and our *fig.* 4 in Plate 10.

**SPECIFIC CHARACTER.**—Pubescent. Petioles simple; leaves flat, three-

parted; segments wedge-shaped, and slightly three-lobed, each lobe tipped with a mucro. Raceme few-flowered, slender, simple; spur straight, equal in length to the sepals.

**DESCRIPTION, &c.**—This species is not very ornamental, from the slenderness of the raceme and the fewness of the flowers; though they are pretty in themselves, from the reddish hue of the petals, and their yellow fringe, which contrasts agreeably with the bright blue of the sepals. The plant is tall and straggling; the slender stems rising to the height of three or four feet, without a branch. The species is a native of North America, whence it was introduced in 1836; and it is quite hardy in British gardens.

### 7.—DELPHINIUM ELEGANS, *Dec.* THE ELEGANT LARKSPUR.

**SPECIFIC CHARACTER.**—Petioles hardly dilated at the base; leaves smooth, five-parted, with 3—5-cleft lobes, and linear-lanceolate, acute lobules; racemes loose, few-flowered; petals shorter than the calyx; spur curved, shorter than the sepals. (*G. Don.*)

**VARIETIES.**—*D. e.* 2 *multiplex*, *Moris. Fl. Consp.*—*D. grandiflorum*, fl.-pl. *Hort.* Flower double.

**DESCRIPTION, &c.**—The flowers are small, and dark blue. The species is a native of North America, introduced in 1741. The variety, which is commonly called the Double Larkspur, is confounded by Mr. George Don with *D. Barlowii*; but when grown together they appear quite distinct. *D. Barlowii* is a very tall, strong-growing plant, continuing in flower all the summer; while *Delphinium elegans* and its variety are both small plants, never growing above a foot or eighteen inches high, with very slender stems, and small delicate leaves, and flower only in June or July.

8.—DELPHINIUM TRICORNE, *Michx.* THE THREE-HORNED LARKSPUR.

ENGRAVING.—Lodd. Bot. Cab. t. 306.

VARIETY.—D. t. 2 *multiflorum*, *Dec.* Plant very pubescent. Flowers from fifteen to twenty in dense racemes.

SPECIFIC CHARACTER.—Petioles smooth, very little dilated at the base. Leaves 5-parted, with 3—5-cleft lobes, and linear lobules. Petals shorter than the calyx. Capsules three, reflexed, arched, and spreading from the basis. (*G. Don.*)

DESCRIPTION, &c.—This is perhaps the smallest of all the Larkspurs, seldom growing above six or eight inches high, and flowering profusely in May and the beginning of June. The flowers are purple, and the sepals, which are pointed, project at right angles, so as to look like three horns. It is a native of the shady sides of hills in Carolina and Virginia, and was introduced in 1818. It is tolerably hardy; but it is generally cultivated in pots in England; as when it is grown in the open ground, it dies quite down in winter, and as no remains of it are to be seen, it may easily be lost.

9.—DELPHINIUM ELATUM, *Ait.* THE COMMON BEE LARKSPUR.

SYNONYMS.—D. exaltatum, *G. Don*; D. tridactylum, *Mich.*; Tall Larkspur.

SPECIFIC CHARACTER.—Petioles not dilated at the base. Leaves

flat, cleft into 3—5—7 parts beyond the middle; with wedge-shaped lobes that are trifid or jagged, and acuminate at the apex. Racemes straight. Spur straight, length of the calyx. (*G. Don.*)

DESCRIPTION, &c.—This well-known plant grows from three to six feet high, generally attaining the latter height in gardens. The sepals are pale blue, or white, with the dark, bearded petals folded up in the centre of the flower, and looking just as though a bee were nestling into it to collect the honey. The species is a native of North America, whence it was introduced in 1758. In British gardens it prefers a good soil and sheltered situation; and it flowers in July and August.

10.—DELPHINIUM AZUREUM, *Michx.* THE AZURE LARKSPUR.

ENGRAVINGS.—Bot. Reg. 1999; and our *fig. 5* in Plate 9 of the variety.

VARIETY.—D. a. 2 *carnea*. Flowers pale pink.

SPECIFIC CHARACTER.—Petioles dilated at the base; leaves 3—five-parted, much cut, lobes linear. Raceme erect. All the petals bearded at the apex; the lower ones very hairy.

DESCRIPTION, &c.—No plant can be worse named than this; as the variety is pinkish instead of blue, and is yet exactly like the species in every other respect—having even the same specks of green on each sepal. The species is a native of Texas, whence it was sent home by Mr. Drummond; and the variety was sent home by Douglas from California, both in 1836. The species is said in books to have been introduced in 1805; but if this was the case, it was soon lost. In gardens it should be grown in sandy soil. It flowers in May.

11.—DELPHINIUM INTERMEDIUM, *Ait.* THE VARIABLE BEE LARKSPUR.

ENGRAVINGS.—Bot. Reg. t. 1963, of the species; and Bot. Reg. t. 1969, 1984, and t. 38, and 52 for 1838, and our *fig. 3* in Plate 9, of the varieties.

SPECIFIC CHARACTER.—Petioles not dilated at the base. Leaves 5—7-cleft, upper ones three-lobed; all the lobes deeply serrated. Raceme glaucous. Pedicels, bracts, calyx, and ovaries, glabrous.

VARIETIES.—These are very numerous; but the kinds commonly grown in British gardens are the following, which are considered as species by some botanists:—

D. i. 2 *pallidum*, *Lindl.* Bot. Reg. t. 1969. Flowers pale. Leaves cordate, as in the species.

D. i. 3 *sapphitinum*, *Lindl.* Bot. Reg. for 1838, t. 52; and our *fig. 3* in Plate 9. This variety is remarkable for the varying hue of its sepals, which are dark blue shot with violet. The leaves are cordate at the base.

D. i. 4 *palmatifidum*, *Lindl.* Bot. Reg. for 1838, t. 38; D. *palmatifidum*, *Dec.* The sepals are light blue, tinged with pink; and the petals, which are nearly black, are divided into two narrow lobes, and are very hairy. The leaves are truncate at the base.

D. i. 5 *ceruleans*, *Lindl.* The sepals are of a very pale blue; and the leaves are truncate at the base.

DESCRIPTION, &c.—This Larkspur and all its varieties are decidedly of the kind called Bee Larkspurs, as the contrast between the light colour of the sepals, and the almost black petals, which are curiously folded up and

very hairy, forms exactly the representation of a bee or large fly nestling into the flower, as though in search of honey. The plants are all tall and showy-looking, with large leaves, and bearing a profusion of flowers. They are divided by De Candolle into two species, viz., *D. intermedium*, in which, and its varieties, the leaves are cordate; and *D. palmatifidum*, in which, and its varieties, the leaves are truncate. These distinctions are, however, very variable, as the leaves are never decidedly either cordate or truncate; and they differ very much in different plants.

The species was introduced in 1710, and the varieties at different periods since 1819. They are all natives of Europe, and *D. i. palmatifidum* is said to be found also in Siberia. Among the varieties I have not regularly enumerated are two, one a native of Hungary, *D. i. alpinum*, and another, *D. i. larum*, mentioned by Miller, which appear to have been introduced long since, though they are probably now lost. The species and all the varieties are quite hardy in British gardens, but they grow best in a rich soil and sheltered situation, as when exposed, they are often broken by high winds. They are very ornamental, and well deserving of a place in every garden of sufficient size to prevent them from appearing crowded. They are generally propagated by division of the root, seldom coming true from seed. They generally flower from June to August, their principal beauty being in July.

#### 12.—DELPHINIUM URCEOLATUM, Willd. THE HOLLOW-LEAVED LARKSPUR.

ENGRAVING.—Bot. Mag. t. 1791.

SPECIFIC CHARACTER.—Petioles not dilated at the base. Leaves concave, cleft beyond the middle into three, with wedge-shaped lobes, which are cut and acuminate at the apex. Racemes straight. Spur straight, rather longer than the calyx. (G. Don.)

DESCRIPTION, &c.—This species bears a considerable resemblance to some of the varieties of *D. intermedium*, in the flower, though the spur is longer and more wrinkled; but it is easily distinguished from them by the great thickness of the flower-stem, and the shape of the leaves, which are less deeply cleft than usual, and have a peculiarly hollow or cup-like appearance between the termination of the lobes and the petiole. It is said to be a native of North America, but it has been found apparently wild in Europe. It was introduced in 1801; and it flowers in June.

#### 13.—DELPHINIUM CUNEATUM, Stev. THE WOLGA LARKSPUR.

SYNONYMS.—*D. azureum*, Hort. Par.; *D. elatum*  $\beta$ , Lam.; *D. hybridum*, Lin.; *D. h.  $\beta$  pubiflorum*, Dec.; Wedge-leaved Larkspur.

ENGRAVING.—Bot. Reg. t. 327.

DESCRIPTION, &c.—This species resembles the last in the shape of the flowers; but it differs in the colour of the sepals, which are blue shot with purple; and in the petals, which are yellow. The plant grows three or four feet high, with numerous flowers, and large yellowish green leaves. It is a native of the banks of the Wolga, and is quite hardy in British gardens, where it flowers in June.

#### 14.—DELPHINIUM MESOLEUCUM, Link. THE WHITE-PETALED LARKSPUR.

ENGRAVING.—Moris. Flora Conspicua, t. 25; Maund's Bot. Gard. No. 403.

SPECIFIC CHARACTER.—Leaves somewhat dilated at the base, with wedge-shaped segments, which are deeply serrated at the top. Upper part of the stem as well as the petioles pubescent. (G. Don.)

DESCRIPTION, &c.—This Larkspur is distinguished by the petals being white, or a very pale yellow. It grows about three feet high, and was introduced in 1822. It flowers in August.

15.—*DELPHINIUM DECORUM*, *Fisch. et Mey.* THE PRETTY LARKSPUR.

ENGRAVING.—Bot. Reg. for 1840, t. 64.

SPECIFIC CHARACTER.—Slightly pubescent. Leaves three-parted; lobes sometimes bi-cleft. Flowers large, divaricate, sepals spreading;

spur hooked at the tip. Capsules three, spreading.

DESCRIPTION, &c.—The flowers are remarkably large, and widely opened, the sepals spreading far apart. The petals are of the same purple as the sepals, with the exception of the upper two, which are blue. The lower petals are covered with golden yellow hairs. The roots are somewhat tuberous. This species is a native of New California, whence it was introduced through Russia in 1839.

16.—*DELPHINIUM LAXIFLORUM*, *Dec.* THE LOOSE-FLOWERED LARKSPUR.

ENGRAVING.—Bot. Reg. for 1838, t. 30.

SPECIFIC CHARACTER.—Petioles not dilated at the base. Leaves three, five, or seven-lobed, cut almost to the base; lobes oblong, pinnately cut at the tip, lobules narrow entire. Racemes loose-flowered. Bracts and ovaries pubescent.

DESCRIPTION, &c.—This is a very distinct species, from the long petioles of the flowers, which are rather small, with yellowish petals and slender bracts; and also from the singular shape of the leaves, which are cut almost to the base, into three oblong lobes, which are entire in their lower part, but jagged at the tip. The plant is quite hardy, and grows four or five feet high in good soil; it flowers in June. It may be propagated either by seeds or division of the root; and if by the former mode, the seeds may be sown in May in the open ground, and they will flower in the autumn of the same year, though not so well as they will do the year following. This species is said by De Candolle to be a native of Siberia; but this Dr. Lindley appears to doubt. It was introduced about 1837.

17.—*DELPHINIUM MONTANUM*, *Dec.* THE MOUNTAIN LARKSPUR.SYNONYMS.—*D. hirsutum*, *Roth.*; *D. elatum*, *All.*

ENGRAVINGS.—Bot. Reg. t. 1936; and our fig. 2 in Plate 9.

VARIETY.—*D. m. 2 bracteatum*, *Dec.* Bracts large.

SPECIFIC CHARACTER.—Petioles not dilated at the base. Leaves pubescent, five-lobed; lobes wedge-shaped at the base, pinnately cut, raceme simple, close-flowered; bracts, calyx, and capsule pubescent, spur inflexed.

DESCRIPTION, &c.—This species grows five or six feet high, with an erect, closely-flowered raceme, sometimes without a branch, and as much as two feet long. It is a native of the Alps, the Pyrenees, and other mountains of central Europe; and it was introduced about 1830. It is very hardy, and will grow in any soil or situation not too damp. It flowers in August, and ripens seeds abundantly, by which it is generally propagated.

18.—*DELPHINIUM SPECIOSUM*, *Birb.* THE SHOWY LARKSPUR.

ENGRAVING.—Bot. Mag. t. 1503.

SPECIFIC CHARACTER.—Petiole not dilated at the base. Leaves pubescent, 5-lobed; lobes deeply serrated. Bracts lanceolate, covered with clammy hairs. Spur slightly curved; capsules glabrous.

DESCRIPTION, &c.—The flowers are large, with the sepals a bright blue, and the petals nearly black. The species is a native of Mount Caucasus, and it was introduced in 1829. It is a tall, handsome plant, flowering from June to September; and it is increased by division of the root, or by seeds.









20.—*DELPHINIUM TRISTE*, *Dec.* THE DARK-FLOWERED LARKSPUR.

**SYNONYME.**—*D. obscurum*, *Stev.*

**ENGRAVINGS.**—*Flor. Cab.* vol. ii., p. 33; and our *fig.* 3 in Plate 10.

3—5-parted; lobes deeply cut. Raceme slightly branched. Spur slightly curved, obtuse. Nearly the whole plant, except the leaves, downy.

**DESCRIPTION, &c.**—The colour of the flowers of this species is so remarkable as to render it quite unlike a Larkspur. They are of a dark brown, tinged with puce and densely covered with hairs. The species is said to be a native of Siberia, and it was introduced in 1822. It must be propagated by seeds, as it does not bear dividing the root. The flowers have a disagreeable smell.

## SECTION STAPHISAGRIA.

21.—*DELPHINIUM STAPHISAGRIA*, *Lin.* THE STAVESACRE LARKSPUR.

**SYNONYME.**—Lousewort Larkspur.

**SPECIFIC CHARACTER.**—Spur very short; bractæ inserted at

the base of the pedicels; petioles hairy; pedicels twice as long as the flowers. (*G. Don.*)

**DESCRIPTION, &c.**—This species is truly a biennial, dying as soon as it has ripened its seeds. The flowers are blue, with whitish petals. It is common in the South of Europe and Teneriffe, generally growing among rubbish. Most of the seeds sown in gardens are brought from Italy, as they do not ripen well in this country; the plant being rather tender here. The seeds are large and rough, with a disagreeable smell and taste. They were formerly used medicinally. The plant grows two or three feet high, and flowers in May and June. It was cultivated in Britain before 1596.

22.—*DELPHINIUM PICTUM*, *Willd.* THE PAINTED-LEAVED LARKSPUR.

**SYNONYMS.**—*D. Staphisagria*, *Wood.*; *D. maritimum*, *Cav.*

**ENGRAVINGS.**—*Swt. Brit. Flow. Gard.* t. 128; and our *fig.* 2 in Plate 10.

**SPECIFIC CHARACTER.**—Spur somewhat shorter than the calyx. Bractæ inserted at the base of the pedicel. Petioles pubescent. Pedicels a little longer than the flowers.

**DESCRIPTION, &c.**—This plant closely resembles the last species, except in the leaves, the veins of which are white. It is a biennial, and can only be propagated by seeds, the plants raised from which do not flower till the second year, and die as soon as they have ripened their seeds. It is a native of the South of Europe, and was introduced in 1816.

OTHER SPECIES OF *DELPHINIUM*.

These are numerous, but the following are the most remarkable:—

*D. VIRESSENS*, *Nutt.*

Flowers greenish. A native of North America, introduced in 1827.

*D. ALBIFLORUM*, *Dec.*

Flowers white. A native of Armenia, introduced in 1823.

D. FLEXUOSUM, *Dcc.*

Stem flexible ; flowers blue ; a native of Caucasus, introduced in 1817.

D. OCHROLEUCUM, *Dcc.*

Flowers cream-colour. A native of Caucasus, introduced in 1817.

D. CASHMERICUM, *Royle.*

With vine-like leaves, and very large blue flowers. A native of Nepaul, introduced in 1840.

## D. REQUIENI.

A biennial. A native of the South of Europe, introduced in 1819 ; closely resembling *D. pictum*, but more tender.

## GENUS XVI.

ACONITUM, *Lin.* THE MONKSHOOD, OR WOLFSBANE.*Lin. Syst.* POLYANDRIA TRIGYNIA.

**GENERIC CHARACTER.**—Calyx of five irregular petal-like, deciduous sepals, the upper one of which is concave or helmet-shaped. Petals two, hidden within the helmet, on long stalks, forming a hollow tube at the apex, and drawn out at the end into a spur.

**DESCRIPTION, &c.**—Few flowers are more curiously formed than those of this genus ; their ornamental part is the calyx, which is divided into five sepals, the upper one of which forms a kind of helmet, supported by two large side petals, like the cheek plates of a visor ; while the other two petals, which are much smaller, hang down behind. Beneath the helmet, or cowl, as it equally may be fancied, are the petals, curiously folded up so as to form a kind of pouch at the upper end, while the other is drawn out into a kind of claw ; each petal being supported on a very long stalk. These curiously-formed petals were called by Linnaeus nectaries, and the sac at the apex of each was supposed to be a receptacle for honey. The seed-vessels, like those of the Larkspur, are follicles ; that is, they appear formed of a leaf curved round so as to make the two side edges meet, and united by a kind of seam, called a suture. These seed-vessels are usually produced three or five together, and each contains numerous seeds, which they open at the upper part to discharge. The plants are tall and erect ; with the flowers produced in a long terminal raceme, and with the leaves generally deeply cut. The roots are partly fleshy, generally forming small radish-like tubers just below the collar. These tubers are a deadly poison in most of the species, and in all are dangerous. The leaves are, in most cases, deeply five-cleft, with the lobes cut into numerous linear lobules. The plants are generally of the easiest culture, growing freely in any tolerably good soil and sheltered situation. The flowers are blue, purple, pale yellow, and white, but never pink. The name of Aconitum is said to be taken from Acona, a city in Greece, near which some of the species are found in great abundance ; Monkshood alludes to the cowl-like upper sepal ; and Wolfsbane, to the poisonous qualities of the plants. The genus is a very large one (above a hundred and thirty species having been introduced) ; and it has been divided by modern botanists into eight sections. As, however, only a few of these plants can be procured, I have only described those which appear to be the most ornamental, taking one or two in each section.

## SECTION I.—ANTHOROIDÆA.

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**SECTIONAL CHARACTER.**—Calyx permanent. Petals supine, somewhat hooked, lip obcordite, tapering into the pedicel. Stamens smoothish. Capsules five, erect. Roots napiform. (*G. Don.*)

**DESCRIPTION, &c.**—The roots of the plants contained in this division are said not only to be somewhat less poisonous than the rest, but actually to have been formerly used in medicine, and considered as an antidote to the poison of the other species. The species in this section have generally yellow or cream-coloured flowers, with an arched helmet, and five capsules. The roots are tuberous; and the leaves are palmately cut into linear lobes. This section is a very small one.

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### 1.—ACONITUM ANTHORA, *Linn.* THE WHOLESOME ACONITE, OR YELLOW MONKSHOOD.

**SYNONYMS.**—*A. ochroleucum*, *Sal.*; *A. tuberosum*, *Patrin.*; fig. 2 in Plate 11.

*A. salutarium*, *Bauh.*

**SPECIFIC CHARACTER.**—Spur refracted, germinous equally pubescent

**ENGRAVINGS.**—Bot. Mag. t. 2651, Bot. Gard. No 694, and our (*G. Don.*)

**DESCRIPTION, &c.**—The upper sepal of the flowers of this plant is exactly in the shape of a helmet, having even a little peak in front like a traveller's cap. The petals are more like petals than in some of the species, hanging down in a leaf-like manner from the tip of the long pedicel or foot-stalk. The species is a native of the Alps, the Pyrenees, and other European mountains, and it was introduced before 1596. De Candolle enumerates eight varieties of this species, but they appear to differ very slightly. It is quite hardy, and it is propagated by division of the root. It flowers from June to August.

## SECTION II.—NAPELLOIDEA.

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**SECTIONAL CHARACTER**—Calyx deciduous. Petals supine, obtuse, | spherical, or arched. Lobes of leaves cuneate, bipinnate Roots or capitate, with a bifid lip. Stamens pilose. Capsules usually three, | tuberous (*G. Don.*)  
young ones diverging. Peduncles nodding. Helmet convex, hemi

**DESCRIPTION, &c.**—The plants included in this section all bear more or less resemblance to the common monkshood; and they have all tuberous roots, which resemble a bunch of little black turnips; and hence the name of the section, *Napus*, signifying a turnip. The roots of these plants are an extremely virulent poison. The flowers are generally blue or white; and they are large and handsome; but the helmet has not a projecting peak in front. The leaves are deeply cut; but the lobules are not so slender as in the preceding section.

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### 2.—ACONITUM NAPELLUS, *Linn.* THE COMMON MONKSHOOD.

**SYNONYMS.**—*A. vulgare*, *Dec.*; *A. Tauricum*, *Schl.*; *A. Schleicheri*, *Rehb.*; *A. tenuifolium*; *A. compactum*; *A. Hallian*, *A. bicolor*.

**ENGRAVINGS.**—Eng. Bot. 2d ed. t. 769, Bot. Gard. t. 210, and our fig. 7 in Plate 11.

**SPECIFIC CHARACTER.**—Spur capitate, helmet convex, hemispherical, gibbous, smoothish, lip of the nectary revolute, peduncles erect, leaves pedately 5-parted. (*G. Don.*)

**DESCRIPTION, &c.**—Perhaps few plants are more common in gardens than the common monkshood, notwithstanding its poisonous qualities; its tall and vigorous habit of growth, and its showy flowers, making it a general

favourite. The species is a native of Switzerland, from which country it was introduced before 1596; but it is now frequently found wild in England and other parts of Europe. It is generally propagated by dividing the root; as, though it ripens seeds abundantly, the seedlings seldom flower till the second or third year.

### 3.—ACONITUM NEUBERGENSE, *Clus.* THE NEUBERG, OR STYRIAN MONKSHOOD.

**SYNONYMS.**—*A. Napellus*, *Jacq.*; *A. neomontanum*, *Wulf.*,  
*A. Cammarum*, var. *B*, *Lin.*; *A. Braunii*, *Rehb.*

**SPECIFIC CHARACTER.**—Spur capitate; filaments pilose; helmet closed, hemispherical; peduncles spreading; lip revolute. (*G. Don.*)

**ENGRAVING.**—Lodd. Bot. Cab. t. 1410.

**DESCRIPTION, &c.**—This species is often confounded with the common kind; but it differs in several respects. The flower is much longer, and it resembles rather a lady's head-dress in the beginning of the last century, with a high cap and pinners, than a monk's hood. The flowers are on rather long pedicels, and form a loose, panicle-like raceme; and the segments of the leaves are short and blunt. The plant is a native of Styria and Hungary, whence it was introduced in 1823. It is quite hardy in British gardens, where it should be grown in light loam; and it flowers from July to October.

### SECTION III.—CALLIPARIA.

**SECTIONAL CHARACTER.**—Calyx deciduous. Petals supine, truncate, or a little hooked, with the lip scarcely emarginate. Stamens smoothish. | Capsules 3—8, erect. Helmet depressed, conical or hemispherical. Sac of petals large. (*G. Don.*)

**DESCRIPTION, &c.**—The name of Calliparia signifies beautiful cheeks, and it is applied to this section on account of the large size of the side sepals, in proportion to the helmet. This section includes all the Nepaul species, which are remarkable for their entire leaves, in which respect they differ from all the other kinds of Aconitum.

### 4.—ACONITUM HETEROPHYLLUM, *Wall.* THE VARIOUS-LEAVED MONKSHOOD.

**SYNONYMS.**—*A. atees*, *Royle*.

**ENGRAVINGS.**—Royle Illust. t. 13; and our fig. 1 in Plate 11.

**SPECIFIC CHARACTER.**—Flowers in a racemose panicle. Helmet pubescent, semicircular. Spur obtuse, limb elongated and recurved;

filaments winged; ovaries pubescent; bracts approximate, rounded or oblong, entire. Leaves cordate acuminate; crenulated or sinuately toothed at the margin.

**DESCRIPTION, &c.**—This very singular, and, as Dr. Royle calls it, "highly ornamental species," is found on lofty mountains in India, nine or ten thousand feet above the level of the sea. It is remarkable for its leaves, the upper ones being sessile, cordate, with a notched or toothed margin, and the lower ones on long petioles, deeply and sharply toothed, and sometimes slightly lobed. The roots have two oblong oval tubers, which are used in medicine, and called *atees* by the Indians. The flowers, which are disposed in a panicle raceme, are large and roundish, and the five follicles are somewhat pubescent. The cordate leaves form the most remarkable feature in this and the two other Indian species, *A. cordatum*, Royle, and *A. ovatum*, Lindl.; though probably these names may be applied to one plant, as they appear to agree in construction, and both come from Cashmere. *A. heterophyllum* and *A. ovatum* were introduced in 1840. *A. ferox*, another nearly allied Indian species, but with palmate leaves, was introduced in 1820.









## SECTION IV.—EUCHYLODEA.

**SECTIONAL CHARACTER.**—Calyx deciduous. Petals (nectaries) supine or erect, inflated, somewhat hooked, gibbous. Stamens pilose or smooth. Capsules 3—5, young ones converging. Peduncles erect. Helmet depressed or high, conical or arched. (*G. Don.*)

**DESCRIPTION, &c.**—The species included in this section differ widely from all the other kinds of monkshood, in their stems being twining, or at least so flexuous as to require support. The flowers are blue or violet, and loosely disposed on the raceme; and the leaves are very much cut, into long slender segments. In some of the species the leaves are on long footstalks, and in others the roots are tuberous. The name of Euchylodea signifies wholesome juice, because these plants are considered not so poisonous as the others.

5.—*ACONITUM TORTUOSUM*, Willd. THE TWISTED MONKSHOOD.

**SYNONYME.**—*A. illitum*, Rehb.

**SPECIFIC CHARACTER.**—Petals supine; beak blunt; helmet sub-

conical; spur thick, long, abruptly pointed; filaments rather pilose. (*G. Don.*)

**DESCRIPTION, &c.**—The root is tuberous; and the flowers, which are large and violet-coloured, are produced in loose panicles. The plant is a native of North America, whence it was introduced in 1812.

## A. VOLUBILE, Pall.

This species differs from the last chiefly in the stem being decidedly twining and growing twelve or sixteen feet high. The flowers differ in the beak being sharp, the spur hooked at the apex, and the filaments not hairy. The lobes of the leaves are pinnate, with linear lobules. The species is a native of Siberia, whence it was introduced in 1799.

## SECTION V.—CORYTHOCEOLA.

**SECTIONAL CHARACTER.**—Calyx deciduous. Petals (nectaries) supine, somewhat hooked. Stamens pilose. Capsules 3—5, converging. Helmet arched or conical, variegated. Young peduncles nodding

Root tuberous. Lobs of leaves trapeziform, pinnate. (*G. Don.*)

**DESCRIPTION, &c.**—The species included in this section have generally very beautiful flowers, from the helmet being variegated: a peculiarity which is expressed by the Greek name of the section. They have all tuberous roots, and shaded purple, or striped blue and white flowers.

6.—*ACONITUM STOERCKIANUM*, Rehb. BARON VON STOERCK'S MONKSHOOD.

**SYNONYMES.**—*A. Tauricum*, Räm.; *A. intermedium*, Dec.

**ENGRAVING.**—Lodd. Bot. Cab. t. 1991.

**SPECIFIC CHARACTER.**—Stamens pilose. Helmet arched.

**VARIETY.**—*A. S. bicolor*, Rehb.; *A. versicolor*, Lodd. Bot. Cab.

t. 794; Bot. Gard. t. 436; and our fig. 6 in Plate 11. Plant quite smooth.

**DESCRIPTION, &c.**—A very showy plant, which produces its large, purple shaded flowers in August. It may be kept in a pot, when it will flower profusely when only about a foot high, or it may be planted in the open ground in any good garden soil, when it will attain the height of three or four feet. It is a native of Austria, whence it was introduced in 1820. The variety is a native of Switzerland, whence it was introduced

in 1819. It grows about two feet high, with many branches forming a pyramid; and the flowers, which are blue and white, are produced in August. Both the species and variety are quite hardy, and they are increased by dividing the tubers.

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## SECTION VI.—TOXICOIDEA.

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**SECTIONAL CHARACTER.**—Calyx deciduous. Petals supine, capitate, | Helmet arched, or conical. Roots tuberous. Lobes of leaves trapeziform, or a little hooked. Stamens smooth. Capsules 3—5, erectish. | form, pinnate. Flowers blue or violet, rarely flesh-coloured. (*G. Don.*)

**DESCRIPTION, &c.**—These plants take their name from *toxicon*, poison; their qualities being very dangerous. The flowers are blue, violet, or flesh-coloured; and the roots are tuberous.

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### 7.—ACONITUM PANICULATUM, *Lodd.* THE PANICLED MONKSHOOD.

**SYNONYMS.**—*A. cernuum*, *Koelle*; *A. Cammarum*, *Schleich.*

**ENGRAVINGS.**—*Lodd.* Bot. Cab. t. 810; and on *fig. 5* in Plate 11. **SPECIFIC CHARACTER.**—Helmet large, arched, beaked.

**DESCRIPTION, &c.**—A very pretty species, from the lightness of the elevated helmet, its panicles of flowers, and its flexuous stem. It is a native of Switzerland, whence it was introduced in 1800. It is quite hardy, and grows two or three feet high in any common garden soil, flowering in August. There is a variety with pinkish or flesh-coloured flowers. It is propagated by separating the tubers of the roots.

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## SECTION VII.—CAMMAROIDEA.

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**SECTIONAL CHARACTER.**—Calyx deciduous. Petals erect, clavately hooked.

Capsules usually five, erect, fringed at the suture. Stamens smooth. Helmet conical. Lobes of leaves trapeziform, pinnate.

**DESCRIPTION, &c.**—This section takes its name from the word *Cammarum*, which signifies a crab, lobster, or crawfish; because the upper part of the flowers resembles the recurved tail of a crawfish. The flowers are purplish and sometimes variegated. The roots are tuberous.

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### 8.—*A. ROSTRATUM*, *Bern.* THE BEAKED MONKSHOOD.

**SYNONYMS.**—*A. alpinum*, *Mill.*; *A. cammarum*, *Jam.*; *A. liratum*, *Sal.* **SPECIFIC CHARACTER.**—Helmet bending forward, compressed, beak stretched out.

**ENGRAVINGS.**—*Lodd.* Bot. Cab. t. 203. **VARIETY.**—*A. r. album*, *G. Don.*; *A. album*, *Ait.*; *A. levigatum*, *Schl.* Flowers pure white, or slightly tinged with blue or violet.

**DESCRIPTION, &c.**—This very distinct species is known by its elongated, compressed helmet, which ends in an abrupt point or beak in front. It is a native of Switzerland and Central Europe, and it was introduced in 1752. It flowers from June to August, and usually grows about a foot high, in pots, though it will attain a much greater height in the open ground. It should be grown in loam, and may be propagated by separating the tubers or by seeds, which, however, it does not ripen freely, and which sometimes do not come up till the second spring.

A. VARIEGATUM, *Lin.*; *Maund. Bot. Gard.*

A very elegant plant, with blue and white flowers. One variety has pure white flowers; another is quite a dwarf plant; and a third grows upwards of six feet high. It is a native of Central Europe, and was introduced before 1597. There are many other varieties besides those above enumerated, one of which produces bulbs in the axils of the leaves.

A. UNCIATUM, *Lin.*; *Bot. Mag.* t. 1119; A. SCANDENS, *Muhl.*

A handsome, tall-growing species, with large, deep purple flowers, and broad, lobed leaves, the lobes being only cut into three or four broad teeth at the tip. A native of North America; introduced in 1768.

A. JAPONICUM, *Thunb.*

The flowers of this species are flesh-coloured, but there is a variety with flowers of a very pale blue. The species grows six feet high, and flowers from July to September. It is a native of Japan, and was introduced in 1790.

## SECTION VIII.—LYCOCTONOIDEA.

**SECTIONAL CHARACTER.**—Calyx deciduous. Petals oblique; spur | drical. Root tuberous, emitting numerous fibres. Lobes of leaves  
clavate, straight, arched, hooked or spiral. Capsules three, adult ones | wedge-shaped, pinnate, rarely bi-pinnate. (*G. Don.*)  
erect, or diverging. Stamens smoothish. Helmet conical or cylind-

**DESCRIPTION, &c.**—The plants belonging to this division should all be called Wolfsbane, which is the translation of the Sectional name, instead of Monkshood, as they have quite lost the monk's cowl which distinguished the former species. The helmet in these species is conical or cylindrical; and the colour of the flowers is yellowish or dark purple tipped with green. The roots are tuberous; and the leaves very much divided. One of the species, *A. Lycocotonum*, was formerly used to poison wolves.

9.—ACONITUM BARBATUM, *Swt.* THE BEARDED WOLFSBANE.

**SYNONYMES.**—*A. squarrosum*, *Lin.*; *A. boreale*, *Ser.*

**ENGRAVING.**—Swl. Brit. Flw. Gard. t. 164.

**SPECIFIC CHARACTER.**—Helmet conical, obtuse; spur straight; lip

obovate; wing elaborately bearded. Bracts very small. Stem pubescent.

Leaves five-parted, lobes linear-acuminate.

**DESCRIPTION, &c.**—This very singular species has yellowish flowers, densely bearded at the lower part with long white hairs. The helmet is conical, or rather it forms a long, narrow-pointed cap, with the point. The stems grow from two to six or eight feet high, according to the depth and richness of the soil; and several stems spring from the same root. The species is a native of Siberia, and was introduced in 1807. It is increased by separating the tubers of the root.

10.—ACONITUM AUSTRALE, *Reich.* THE CARPATHIAN PURPLE WOLFSBANE.

**SYNONYMEN.**—*A. vulparia*, var. *Carpathi*, *Ser.*; *A. septentrionale* *& Carpathicum*, *Sinu.*

**ENGRAVINGS.**—*Bot. Mag.* t. 2196; and our fig. 4 in Plate 11.

**SPECIFIC CHARACTER.**—Helmet conical, elongated. Leaves palmately five-lobed; lobes wedge-shaped, incised. Petioles dilated, and stem clasping at the base.

**DESCRIPTION, &c.**—The stem is flexible, angular, quite smooth. The leaves are of a dark green on the upper surface and pale below, with the footstalks dilated at the base, so as to clasp the stem. The helmet is very much

elongated, and the wings are very small. The species is a native of the Carpathian Mountains in Hungary, whence it was introduced in 1815. It is quite hardy, and grows and flowers freely in any common garden soil; it is propagated by seeds, or separation of the tubers of the root.

A. OCHROLEUCUM, *Sim's Bot. Mag.* t. 2570.

This species differs from the preceding one in the flowers being larger, and the tip of the helmet recurved. It is a native of Caucasus, and it was introduced in 1794. The flowers are pale yellow.

A. LYCOCTONUM, *Lin.*

This is the true Wolfsbane, and the powder of the root is said to be still used for destroying rats, flies, &c. It was introduced before 1596.

All the kinds of Aconitum, of which there are many more, are quite hardy in British gardens, and they are valuable for shrubberies, as they are uninjured by the drip of trees.

## GENUS XVII.

### PÆONIA, *Lin.* THE PEONY.

*Lin. Syst.* POLYANDRIA DI-PENTAGYNIA.

**GENERIC CHARACTER.**—Calyx of five unequal permanent sepals, | encircling the ovaries. Carpels from two to five, with thick bilamellate Petals from five to ten, roundish. Stamens numerous. Disc fleshy, | stigmas. Seeds numerous, somewhat globous and shining.

**DESCRIPTION, &c.**—The peonies common in our gardens are of two kinds, viz. those which are allied to the tree peony (*Paeonia Moutan*) and which are all more or less shrubby, and the common herbaceous peonies. The herbaceous peonies are well-known ornaments of our gardens, where they are great favourites, from their showy flowers, their great hardiness, and the easiness of their culture. The roots of these plants are composed of bundles of carrot-like tubers, which may be separated from each other when it is wished to propagate any particular species or variety; or the tubers of the common peonies may be grafted with shoots of any choice kinds. The word *Paeonia* is derived from the name of the Greek physician *Pæon*, who is said to have been the first to use it in medicine.

#### 1.—PÆONIA EDULIS, *Sat.* THE EATABLE-ROOTED PEONY.

**SYNONYMES.**—*P. albiflora*.

**ENGRAVINGS.**—Bot. Reg. t. 42, t. 485, and t. 630; Bot. Mag. t. 1756, and t. 1768; Swt. Brit. Fl. Gard. 2nd Series, t. 351; and our figures 1 and 2 in Plate 12.

**SPECIFIC CHARACTER.**—Stem three-flowered; leaves deeply pinnatifid; the segments ovate-lanceolate, almost entire. Ovary glabrous, flowers erect.

**DESCRIPTION, &c.**—The beautiful varieties of this species were formerly all called *P. albiflora*, from the first that was discovered having been a pure white; as however several have since been discovered of a deep crimson, that name has been very properly abandoned, and that of *P. edulis* substituted in its place. *P. edulis*, which signifies the eatable Peony, alludes to the roots having been eaten in soup in Siberia. The flowers of all

**VARIETIES.**—These are very numerous, but the most beautiful are perhaps *P. c. tartarica*, figured in our plate 12 under the name of *P. albiflora*, and *P. c. Pottsi*, figured in the same plate under the name of *P. edulis*. Some of the varieties are single-flowered, and either white or crimson; and others are very double. One variety, *P. c. fragrans*, is said to be rose-scented.









the kinds are fragrant, particularly in the evening. The species is a native of Siberia beyond the lake Baican. It was introduced in 1784 by the Russian traveller Pallas. It flowers in May and June. It may be propagated by cuttings of the root, or by seeds, which it produces in great abundance; and as the seedlings vary very much and easily hybridise with each other, a great many varieties may be produced.

### 2.—*PÆONIA ANOMALA*, *Linn.* THE ANOMALOUS OR CUT LEAVED PEONY.

**SYNONYMS.**—*P.* *laciniata*, *Pall.*; the jagged leaved Siberian Peony.

**ENGRAVINGS.**—Bot. Mag. t. 1754.

**SPECIFIC CHARACTER.**—Carpels five, smooth, depressed, obtuse, segments of leaves smooth, punctuated, lobes lanceolate, acuminate. (*G. Don*)

**DESCRIPTION, &c.**—This peony, though not remarkable for its beauty, is worth cultivating for its singularity. It has generally five capsules instead of four, which spread out in a star-like manner; the root is very large, and spreading in tuberous branches, which are often a foot long, and which smell like the Florentine Iris, or, as it is commonly called, Orrice-root. The species is a native of Siberia, whence it was introduced in 1788; yet, though a native of so cold a country, it frequently perishes in the winter in this country; but probably more from damp than cold. It is most likely on account of the difficulty of preserving it through the winter, that this species is now so rarely to be met with; as its flowers are not sufficiently showy to make it worth while to take up its tuberous roots, and to preserve them during winter, like those of the Dahlia.

### 3.—*PÆONIA TENUIFOLIA*, *Linn.* THE FINE-LEAVED PEONY.

**ENGRAVINGS.**—Bot. Mag. t. 926; Syst. Brit. Flora, Gard., 2d series t. 34, and our fig. 3 in Plate 12.

**SPECIFIC CHARACTER.**—Carpels tomentose, spreading. Leaves bi-ternate, many-petaled, smooth, segments linear, very narrow, acute.

**DESCRIPTION, &c.**—The species of this flower grows naturally in the Ukraine, and indeed throughout the south of Russia, generally near precipices, or on the steep banks of rapid streams; and it was introduced in 1765. The single-flowered kind has been, however, quite out-shone by the extraordinary richness of a double-flowered variety, which was introduced from the south of Russia in 1824, and which is certainly one of the most splendid kinds of peonies in our gardens. Both the species and variety are quite hardy, and will grow freely in any common garden soil, though they succeed best in a light loam. They are very ornamental, even when not in flower, from the feathery lightness of the foliage, which is particularly striking, from the great contrast it affords to the ordinary foliage of the peony.

### 4.—*PÆONIA HYBRIDA*, *Pall.* THE HYBRID PEONY.

**ENGRAVINGS.**—Bot. Reg. t. 1208; and our fig. 4 in Plate 12.

**SPECIFIC CHARACTER.**—Carpels received, pubescent. Leaves many petaled, segments linear, acuminate, glabrous. Flower drooping.

**DESCRIPTION, &c.**—The leaves of this species appear at first sight to bear so close a resemblance to those of *P. tenuifolia*, as to induce some botanists to suppose it only a variety of that species; while others, including Pallas, have supposed it a hybrid between *P. tenuifolia* and *P. anomala*; and hence its specific name. Dr. Lindley, however, thinks it a distinct species; and it does indeed appear very distinct from *P. tenuifolia* in many respects. In the first place, the flowers of *P. hybrida* are nodding, and those of *P. tenuifolia* erect; secondly, the flower of *P. hybrida* is placed on a long peduncle, which raises it high above the leaves; while that of *P. tenuifolia* has the leaves rising above it, and is almost hidden by them; and lastly, the leaves of *P. hybrida* are broader than those of *P. tenuifolia*, and much more gracefully drooping. Professor Pallas, who

first described it, states that he found it in the Petersburg Botanic Garden, growing near *P. tenuifolia* and *P. anomala*; and that consequently he thought it a hybrid between these species. It is, however, as already stated, very distinct from *P. tenuifolia*, and it is distinguished from *P. anomala*, which has smooth fruit, by the down on its carpels. It has indeed been since found wild in many parts of Russia, and it comes true from seed; so that it appears the idea of its being a hybrid is erroneous. It was introduced in 1822, and it is quite hardy in British gardens.

#### 5.—PÆONIA OFFICINALIS, *Retz.* THE COMMON, OR MEDICINAL PEONY.

**SYNONYMS.**—*Paeonia feminea*, *Fuchs.*; *P. festiva*, *Tausch.*; *P. ambigua*, *Lors.*; Female Peony

**ENGRAVING.**—Bot. Mag. t. 1784.

**SPECIFIC CHARACTER.**—Carpels recurved, tomentose; segments of leaves unequally jagged, with the divisions oblong-lanceolate, smooth, glaucous, and somewhat pilose beneath. (*G. Don.*)

**DESCRIPTION, &c.**—This is the common peony of the gardens, which has been in cultivation since 1548, that is, nearly three hundred years, and which is called by all the ancient writers on gardening the Female Peony. It has always been a favourite garden flower, from its hardiness, and its thriving in almost any soil or situation, even under the shade of trees, where few other plants will live. It is very easily propagated by its tuberous roots, and also by its seeds, which it ripens in great abundance. There are numerous varieties of it, with single, double, and semi-double flowers, of various shades, from white to crimson; and it hybridises freely with the other hardy species. It is found wild in several parts of Europe; and it is evidently the species described by Dioscorides, which he tells us was used by the physician Paeon to cure Pluto when he was wounded by Hercules. Dioscorides calls this the female peony, and the following species the male; and Linnaeus makes them varieties of one species, which he calls *P. officinalis*.

#### 6.—PÆONIA CORALLINA, *Retz.* THE CORAL-COLOURED PEONY.

**SYNONYMS.**—*P. officinalis*,  $\beta$  *mascula*, *Lin.*; the Male Peony.  
**ENGRAVINGS.**—Engl. Bot. t. 1513; 2d ed. t. 768.

**SPECIFIC CHARACTER.**—Leaves alternate, smooth; segments ovate, undivided; carpels four, downy, recurved. (*Smith.*)

**DESCRIPTION, &c.**—This plant has been as long common in English gardens as the preceding, with which it is sometimes confounded; and it has indeed been found wild on an island in the river Severn, though probably its roots had been thrown there with the soil from some garden. The flowers are crimson, and the leaves broad, and of a dark shining green; but the most remarkable part is the kind of crest formed by the four woolly carpels after the petals have fallen, which was formerly considered so ornamental as to be a favourite plant for putting, with other similar strong-growing showy plants, into the large bean-pots which, till nearly the middle of the last century, used to be put into the large grates and fire-places during summer and autumn. The plant is frequently mentioned in old gardening books as useful for this purpose. The culture is extremely simple, as the species is propagated by separating the tubers of the root; and it will grow in any soil and situation not too moist and low. It is found wild in various parts of Europe.

#### 7.—PÆONIA RUSSI, *Bir.* RUSS'S CRIMSON PEONY.

**ENGRAVINGS.**—Swt. Brit. Flow. Gard. t. 122, and our fig.

**SPECIFIC CHARACTER.**—Carpels generally two, pilose, recurved. Segments of the leaves elliptic, entire, somewhat pubescent beneath.

**DESCRIPTION, &c.**—The flower of this species is single, and of a bright crimson; and as, though the flowers are solitary, several stems arise from the same root, it is generally grown by the cultivators of handsome shrubbery-flowering plants. Its leaves are generally whitish underneath, and of a pale green on the upper side.

Though this species may be planted in shrubberies, it succeeds best in an open situation in a rich loamy soil. It is increased by parting the roots, and by seeds, which it ripens plentifully. It never, however, flowers well unless the roots are strong and large, and when this is not the case, the petals drop very soon. This objection holds good with all the peonies; and for this reason, as well as on account of the large size of their flowers, they are quite unfit for small gardens, or for any confined space. This species is a native of Sicily, whence it was introduced in 1822.

#### OTHER SPECIES OF PÆONIA.

*P. TRITERNATA*, Pall. *P. DAURICA*, And. Bot. Rep. t. 486; Bot. Mag. t. 1441.

This is one of the Caucasian peonies; with pale rose-coloured flowers. It was introduced in 1790.

*P. LOBATA*, Desf.

This species has purplish sweet-scented flowers, which are produced in May and June. It is a native of Portugal, and was introduced in 1822.

*P. BROWNLII*, Dcsg.

This is a species with purplish red flowers, found by Douglas on the north-west coast of North America, and introduced in 1826.

*P. HUMILIS*, Ritz.

The flowers of this dwarf species are of a purplish blood colour. It is a native of Spain, and was introduced in 1633.

*P. PARADOXA*, And.

The flowers are of a violet crimson. It is a native of the Levant, but the year of its introduction is unknown.

*P. MOLLIS*, And.; Lodd. Bot. Cab. t. 1863; Bot. Reg. t. 174.

The flowers are of a dull purplish red, and the leaves are covered with a soft down. Neither the native country nor the year of introduction is known.

*P. PUBENS*, Sim's Bot. Mag. t. 2264.

Flowers large, dark purple, with yellow anthers. The whole plant is covered with down. It was introduced in 1821.

*P. VILLOSA*, Syst. Brit. Flav. Gard. t. 113. *P. SESSIFLORA*, Sim's Bot. Mag. t. 2648.

A native of France, with white flowers and downy leaves. Introduced in 1820.

There are some other species, but they differ but slightly from each other.

## CHAPTER II.

### BERBERIDEE.

**CHARACTER OF THE ORDER.**—Sepals 3-4, but usually 6, in two series, deciduous, furnished with petal-like scales on the outside. Petals equal in number with the sepals; rarely double that number, and opposite them; usually furnished with a gland or scale at the base in the inside of each. Stamens equal in number to the petals, and opposite them; anthers adnate, two-celled, opening from the base to

the apex by a small, somewhat elastic valve. Ovary solitary, crowned by the rather orbicular stigma. Fruit one-celled, baccate, or capsular. Seeds erect, usually fixed to the bottom of lateral placentæ; rarely solitary, usually 2-3, ovate or globbose. Albumen fleshy; embryo straight, slender, with the radicle more or less thickened at the point, with flat cotyledons (*G. Don.*)

**DESCRIPTION, &c.—**This order, though it is well known, from the beautiful shrubs belonging to the genera Berberis and Mahonia, included in it, is not supposed, generally, to contain herbaceous plants. There are, however, a few genera of perennials belonging to it which are well deserving of cultivation in gardens.

## GENUS I.

LEONTICE, *Dc.* THE LION'S LEAF.*Lin. Syst.* HEXANDRIA MONOGYNIA.

**GENERIC CHARACTER.**—Sepals 6, naked on the outside. Petals 6, bearing a scale at the base of each inside. Capsules bladdery, 2—4-seeded. (*G. Don.*)

**DESCRIPTION, &c.**—The plants belonging to this genus are all perennials, with tuberous roots and stems, which die down to the ground every autumn, shooting up again in spring. The leaves are said to bear some resemblance to the print of a lion's foot; but they are in fact very much like those of the columbine. The flowers are in loose racemes or panicles, furnished with ovate, leafy, entire bracteas at the base of the pedicels, and usually with a coloured calyx. The different species, which are all pretty little plants with yellow flowers, are natives of Europe, Asia, and North America; and they are divided into two sections, one of which has the capsule inflated and not opening naturally, and the other has a berry-like capsule which opens when the seeds are ripe.

## SECTION I.—LEONTOPETALUM.

**SECTIONAL CHARACTER**—Capsules greatly inflated when mature, never ruptured, enclosing the seeds. Upper leaves pinnate or ternate. Petioles simple, or divided at the top, not at the base. (*G. Don.*)

1.—LEONTICE CHRYSOGONUM, *Lin.* GOLDEN-KNEED LION'S LEAF.

**SYNONYMS.**—*Chrysogonium* *Dioscoroides*, *Rauw.*; *Bongardia* *Rauw.*

**SPECIFIC CHARACTER.**—Leaves pinnate; leaflets sessile, oval-oblong, 3—5 cleft at the apex; bracteas small, scarious. (*G. Don.*)

**DESCRIPTION, &c.**—A pretty little plant, with bright yellow flowers rising from the knees or forks of the stem. It is a native of Greece, whence it was introduced in 1740. It is very apt to be killed by damp during winter; and to avoid the danger of this, it does best grown in a pot in a mixture of sand, loam, and peat.

*L. LEONTOPETALUM, Lin.*

This is the true Lion's Leaf, the Pied-de-Lion of the French. The flowers are yellow, and striated with veins, and the leaves bear considerable resemblance to the print made by a lion's foot. It is a native of Greece, whence it was introduced before 1597.

*L. VESICARIA, Pall.*

This species is found wild in the salt marshes of Siberia, and it will not grow unless watered with a solution of salt. It was introduced in 1822.

## SECTION II.—CAULOPHYLLUM.

**SECTIONAL CHARACTER.**—Capsules hardly inflated, sometimes baccate, ruptured when mature; the seeds are therefore exerted. Bearing only one leaf on each stem, which is situated under the raceme, petiole

three-parted from the base, bearing three or five leaflets on each part. (*G. Don.*)

2.—LEONTICE ALTAICA, *Pall.* THE ALTAIAC LION'S LEAF.

**ENGRAVINGS.**—Bot. Mag. t. 3215, and our *fig.* 2 in Plate 13.

**SPECIFIC CHARACTER.**—Stem leaf solitary; petioles three-parted,

divided to the base, each part bearing 5 oblong, entire leaflets, which

are palmately disposed. (*G. Don.*)

**DESCRIPTION, &c.**—A very pretty little plant, with a tuberous root like a small dark turnip. The flowers

are pretty, and they are produced in great abundance. The plant is very suitable for rockwork. It is a native of the Altai mountains, whence it was introduced in 1822.

*L. ODESSANA, Fisch.*

"This plant differs from *L. altaica*, in the pedicels being a little longer, and the stamens being double the height of the petals, and with the segments of the leaves on rather longer stalks." *G. Don*.—It is a native of Odessa, whence it was introduced in 1828.

*L. THALICTROIDES, Lin.*; *Lodd. Bot. Cab.* t. 1473. *CAULOPHYLLUM THALICTROIDES, Michael.*

An American species with yellowish-green flowers and deep blue berries, called Cohosh by the Indians, by whom the plant is esteemed medicinal. It was introduced in 1781.

GENUS III.

*EPIMEDIUM, Lin.* BARRENWORT.

*Lin. Syst.* TETRANDRIA MONOGYNIA.

**GENERIC CHARACTER.**—Sepals 4—8, furnished with bracts on the outside at the base. Petals 4—6, furnished on the inside with two coloured appendages. Stamens 4—6. Style 1. Seeds obliquely and transversely situated, unilateral. (*G. Don*.)

**DESCRIPTION, &c.**—The name of Epimedium alludes to the habitat of *E. alpinum*, which is said to grow in Media, but is also found wild in various parts of Europe, and even in Great Britain, always in woods or coppices. It was long supposed that there was only one species in the genus. "The little dingy *Epimedium alpinum*," says Dr. Lindley, in the *Botanical Register*, "known only in the gardens of botanists, gave no promise of its representing a line of beautiful herbaceous plants, and for a long time it was supposed to be the only one of its race. The researches, however, of modern travellers have brought to light the existence of five others." The most remarkable of these are *E. macranthum*, *E. violaceum*, *E. pubigerum*, *E. elatum*, and *E. Musschianum*, which has large white flowers, and which is the handsomest of the genus. The species are all what are called alpine plants, that is, dwarf hardy plants suitable for rockwork. The common species is a native of Europe, but the most ornamental kinds are natives of Japan.

I.—*EPIMEDIUM ALPINUM, Lin.* THE ALPINE BARRENWORT.

ENGRAVINGS.—Eng. Bot. t. 438, 2d ed. t. 226

**SPECIFIC CHARACTER.**—No leaf at the root. Leaf on the stem solitary, twice ternate.

**DESCRIPTION, &c.**—This is a dwarf plant scarcely a foot high, with a slender, creeping root, which scarcely penetrates into the ground. There are numerous succulent stems, which die down to the ground as soon as the leaves have withered, which they do very soon. The flowers appear early in spring, and though the leaves increase for a short time after the flowers disappear, they soon wither away. The plant has received its English name of Barrenwort from the peculiarity observed in all the species, of the plants producing no visible seeds. This peculiarity is mentioned by Dioscorides, who first described the plant. The flowers of this species have no striking beauty, but the leaves are rather pretty, from their neat form, and delicate almost transparent green. When the plant is cultivated, it is generally in Botanic Gardens, on rockwork, where it will grow in any common garden soil if not too wet.

2.—*EPIMEDIUM DIPHYLLUM*, *Lodd.* THE TWIN-LEAVED BARRENWORT.

**ENGRAVINGS.**—*Lodd.* Bot. Cab. t. 1858; and Bot. Mag. t. 3448. | with spreading hairs, particularly at the joints, which are swollen.  
**SPECIFIC CHARACTER.**—Petioles filiform, dichotomous sparingly covered | Petals flat.

**DESCRIPTION, &c.**—This species differs widely from all the others in the shape and colours of its flowers, which are white and quite flat. The leaves, however, and all the parts of fructification are exactly the same as in the other species. This species is said to have been introduced from North America, in 1812. Its flowers are rather pretty, but scarcely enough so to make the plant worth cultivating.

3.—*EPIMEDIUM MACRANTHUM*, *Morren et Decaisne.* THE LARGE-FLOWERED EPIMEDIUM.

**ENGRAVING.**—Bot. Reg. t. 1906; and our fig. 1 in Plate 12.  
**SPECIFIC CHARACTER.**—Leaves trinervate; leaflets cordate-ovate, | terior petals ovate-lanceolate; interior ones twice as long, and ending in a spur.  
 petioles pilose. Racemes many-flowered. Sepals linear-obtuse. Ex-

**DESCRIPTION, &c.**—This is a very elegant little plant, with fragrant flowers. It is a native of Japan, whence it was brought to Europe by Dr. Von Liebold, in 1834. It appears quite hardy; though it is generally kept in a pot for balconies, &c., as its flowers look best near the eye. It generally flowers in May.

4.—*EPIMEDIUM VIOLACEUM*, *Mor. et Dec.* THE VIOLET EPIMEDIUM.

**ENGRAVING.**—Bot. Reg. for 1840, t. 43.  
**SPECIFIC CHARACTER.**—Leaves trinervate; leaflets cordate, sagittate, | entire, acuminate, ciliated. Petioles bearded at the joints. Flowers racemose. Spurs nearly equal in length to the petals.

**DESCRIPTION, &c.**—This is by far the prettiest of the genus. It is a native of Japan, whence it was introduced in 1840. It is quite hardy, and very well adapted for rockwork, or any other situation usually planted with Alpines; but, like all similar plants, it is easily killed by extremes of drought or moisture. “It flowers in April and May, and it may be increased by division of the roots when in a dormant state; but, like the other species of the genus, it has never yet been found to seed.” (See Bot. Reg. for 1840.)

## OTHER SPECIES OF EPIMEDIUM.

E. *MUSSCHIANUM*, *Mor. et Dec.*; *Part. Mag. of Bot. vol. v. p. 151.*

This species has flowered at Chatsworth, and its flowers are large, white, and very handsome. It is a native of Japan, and was introduced in 1840.

E. *HEXANDRIUM*, *Hook.*; *CAULLOPHYLLUM GRACILE*, *Doug.*

A native of North America, with lilac and yellow flowers; introduced in 1827. It is common in shady pine forests on the banks of the Columbia; and, indeed, throughout North California. The plant is about a foot high. Like all the Epimediums, it can only be increased by dividing the root.

## GENUS IV.

DIPHYLLEIA, *Michaux.* THE DIPHYLLEIA.*Lin. Syst.* HEXANDRIA MONOGYNIA.

**GENERIC CHARACTER.**—Sepals 6, naked on the outside. Petals 6, | capitate. Berries nearly globose, sessile; 1-celled; 2—3-seeded. naked on the inside. Stamens 6. Styles scarcely any. Stigma | Seeds ovate-oblong. (G. Don.)

**DESCRIPTION, &c.**—There is only one species in the genus. The name of Diphylleia signifies Double-leaf; in allusion to each stem bearing only two leaves.









1.—DIPHYLLEIA CYMOSA, *Michaux.* THE CYMOSE DIPHYLLEIA.

ENGRAVINGS.—Bot. Mag. t. 1666; and our fig.

SPECIFIC CHARACTER.—Leaves two, sub-palmate, angularly lobed, serrate; lobes acuminate.

DESCRIPTION, &c.—The leaves are large and very handsome; and though the flowers are small, they are pretty from their abundance, and being produced in large loose heads or cymes. The berries are of a dark blue, and very ornamental. The plant is a native of North America, whence it was introduced in 1812. It is quite hardy, and grows on the banks of rivulets in Carolina and Virginia. It flowers in May and June.

## CHAPTER III.

## PODOPHYLLACEÆ.

CHARACTER OF THE ORDER.—Calyx of three or four sepals. Petals 6 to 9, disposed in two or three series, each series containing the same number as there are sepals; the outer series alternately with them. Stamens equal in number with the petals, or double that number; filaments filiform; anthers terminal, opening lengthways on the inside by

a double click. Ovary solitary, crowned by a thick peltate stigma, which is nearly sessile. Carpels one-celled, baccate, indehiscent; or capsular, opening round the apex. Seeds numerous, ovate, globous, inverted, fixed to the lateral placenta. (*G. Don*)

DESCRIPTION, &c.—This order consists of water and marsh plants; and though there are four genera, there are only four species; and the only ornamental plants belonging to it are *Podophyllum peltatum* and *Jeffersonia diphylla*.

## GENUS I.

PODOPHYLLUM, *Dec.* THE DUCK'S-FOOT.*Linn. Syst.* POLYANDRIA MONOGYNIA.GENERIC CHARACTER.—Calyx of three sepals. Petals 6 to 9. Stamens 12—18. Berry somewhat fleshy, 1-celled, indehiscent (*G. Don*.)

DESCRIPTION, &c.—The name of *Podophyllum* is abridged from *Anapodophyllum*, the name originally given to it by Tournefort, and which signifies literally Duck's-foot Leaf, in allusion to the shape of the leaves, which rise high above the flower, and are very large and conspicuous. The plants included in this order inhabit shady places in North America. The roots are used in medicine; the leaves and stems are poisonous, and the fruit is eatable.

1.—PODOPHYLLUM PELTATUM, *Trew.* THE PELTATE PODOPHYLLUM, OR COMMON MAY-APPLE.

SYNONYMS.—*Anapodophyllum*, *Tourne.*; *A. canadense*, *Catesb.* | SPECIFIC CHARACTER.—Stem erect, two-leaved, one-flowered. ENGRAVING.—Bot. Mag. t. 1819. | FRUIT ovate. (*G. Don*.)

DESCRIPTION, &c.—A dwarf plant found in patches in the marshes in Canada. Its roots are brittle, and are used in medicine; and a decoction of them is intensely bitter. The berry is ovate, and about the size of a sloe; at first it is nauseous, but when quite ripe it becomes acid and eatable. The flowers are white, and the fruit is yellowish. The species was introduced in 1664, and it flowers in May. It is generally propagated by dividing the roots; and roots are imported from America.

P. CALICARPUM, *Raf.*

Is another species, with a white and reddish fruit, which is very ornamental. The flowers are nodding, and very fragrant. The species is a native of Louisiana, and has not yet been introduced.

## GENUS II.

JEFFERSONIA, *Bar.* THE JEFFERSONIA.*Lin. Syst. OCTANDRIA MONOGYNIA.*

**GENERIC CHARACTER.**—Calyx of four sepals. Petals eight. Stamens eight, with short filaments. Capsules opening by the whole circumference of the apex. Seeds numerous, furnished at the base with a lacerated arillus. (*G. Don.*)

**DESCRIPTION, &c.**—There is only one species which was formerly considered to belong to *Podophyllum*, but which was separated from that genus on account of the natural opening of the capsule. The new genus was found by Dr. Barton and named by him in honour of Jefferson, the president of the United States.

1.—*JEFFERSONIA DIPHYLLA, Pers.* THE TWO-LEAVED JEFFERSONIA.

**SYNONYMS.**—*J. binata, Bart.*; *J. Bartonis, Michaux*; *Podophyllum diphyllum, Lin.*

**ENGRAVINGS.**—*Bot. Mag. t. 1513*; and our *fig.* in our Plate 12.

**SPECIFIC CHARACTER.**—Leaves profoundly cleft into two lobes. Peduncles 1-flowered. Flower white; anthers yellow. Calyx deciduous, coloured. Seeds shining. (*G. Don.*)

**DESCRIPTION, &c.**—A very pretty little plant, which flowers when not more than three or four inches high; though, after the flowers fall, the stem and leaves grow to the height of a foot or more. It is a native of Tennessee and Virginia in North America; always growing in moist places. In gardens it succeeds best in peat soil, mixed with sand and a little loam; and it should always be kept in a shady situation. It is generally increased by dividing the root; and it is sometimes killed by severe frosts. The seed-vessel, after the petals have fallen, bears considerable resemblance to that of the poppy. The species was introduced in 1792.

## CHAPTER IV.

## NYMPHÆACEÆ.

**CHARACTER OF THE ORDER.**—Calyx of 4—5 sepals, inserted in the receptacle. Petals and stamens in one or several series; the stamens alternate with the sepals. Filaments sometimes drawn out beyond the cells of the anthers. Carpels numerous, membranous, many-seeded, enclosed within the torus; and with the stigmas radiating upon the top of the pitcher-shaped fruit.

**DESCRIPTION, &c.**—The only hardy species are included in the two genera *Nymphaea* and *Nuphar*; several of which are natives of Britain.

## GENUS I.

NYMPHÆA, *Neck.* THE WATER LILY.*Lin. Syst. POLYANDRIA POLYGYNIA.*

**GENERIC CHARACTER.**—Calyx of four sepals, girding the base of the torus. Petals sixteen to twenty-eight, adnate to the torus, elevated about the ovary and covering it, so as to appear at first sight inserted in it. Stamens numerous, disposed in many series, inserted in a similar way above the petals.

**DESCRIPTION, &c.**—The Water Lilies are all showy aquatic plants, with fleshy stem-like main roots, fringed with numerous fibres. The leaves are very large and flat; and floating, with the stem in the middle. The flowers are very large, and generally white, but sometimes rose-coloured or blue, but never yellow; and they are generally so placed as to seem to repose on the surface of the waters. The common white Water Lily (*N. alba*) is perhaps the most beautiful species.









1.—*NYMPHÆA ALBA*, *Lin.* THE WHITE WATER LILY.SYNONYME.—*Castalia speciosa*, *Sal.*

ENGRAVINGS.—Eng. Bot. t. 160; 2nd edit. t. 765.

SPECIFIC CHARACTER.—Leaves cordate, quite entire; stigmas 16-rayed; rays ascending. (*G. Don.*)

DESCRIPTION, &c.—This splendid plant is so common, and so generally admired, as to need very little description; but it may be interesting to say a few words on its cultivation. It succeeds best in still water on a loamy soil; and only requires planting by plunging a stake into the mud at the bottom of the pond, and moving it backwards and forwards, and then letting the main root of the plant gently into the cavity, and pressing the mud round it. The species is propagated by dividing the main root or underground stem, taking care that a few of the fibrous roots are attached to each portion, and that these fibrous roots are neither bruised nor broken; those which are at all injured had better be cut off. If the water lily be planted in running water, a stone should be laid on the main root to keep it in the proper place; but the water lily never looks well in running water, as it requires the stillness of a pond or lake to give it that air of majestic repose which is so decidedly its characteristic, and which has made poets call it the queen of aquatic flowers. Even when planted in ponds, it should not be in very deep water, as when this is the case, the stalk becomes elongated and so weak, as to be scarcely able to support the flower, which consequently loses much of the beauty and grandeur of its appearance. The petals close at night and reopen in the morning; but they do not sink beneath the water when they close, as was formerly supposed. There is a dwarf variety, which is found wild in Alsace, also near Baden, and near Moscow; and which is distinguished from the other dwarf kinds, by the stamens looking like pointed petals.

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2.—*NYMPHÆA ODORATA*, *Ait.* THE SWEET-SCENTED WATER LILY.ENGRAVINGS.—Bot. Mag. t. 819, and t. 1652; Bot. Rep. t. 297; and veins on the under surface very prominent; stigmas 16—20-rayed, rays erect, inflexed at the top. (*G. Don.*)

SPECIFIC CHARACTER.—Leaves cordate, quite entire, with the nerves

DESCRIPTION, &c.—This beautiful flower has a most delightful fragrance; but it has the disadvantage of only being open in the morning, as it closes soon after noon. It is a native of North America, whence it was introduced in 1780, and where its rhizoma, or main root, is used in medicine, as it is a powerful astringent. The variety, which is also a native of North America, whence it was introduced in 1812, has small white flowers, with very narrow petals. The variety is often called *rosea*, but not, as Pursh supposes, from the colour of the flowers, it being the under side of the leaf which is red. In the species, some of the inner stamens have petal-like filaments like *N. alba*; but this is not the case with the variety. The culture of both the species and variety is the same as that of the common water-lily.

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3.—*NYMPHÆA NITIDA*, *Sims.* THE SHINING WATER LILY.ENGRAVINGS.—Bot. Mag. t. 1359; and our fig. 4, in Plate 14. SPECIFIC CHARACTER.—Leaves cordate, quite entire; nerves not prominent on the under surface; petioles smooth; petals blunt; stigmas 12—20-rayed. (*G. Don.*)

DESCRIPTION, &c.—This species is easily distinguished from all the others by the dark purple of the outside of the sepals, and also by its rhizoma or root-stock, which is erect, instead of being creeping, with fibrous roots projecting from its sides. The leaves also have the veins sunk into them on both sides, instead of projecting on the lower side as in *N. odorata*. This species is said to be more tender than the others, and to be a native of China. It was introduced in 1809.

4.—*NYMPHÉA PYGMÆA*, Dec. THE DWARF WATER-LILY.

**SYNONYME.**—*Castalia pygmaea*, *Sal.*; *N. tetragona*, *Geor.*  
**ENGRAVING.**—Bot. Mag. t. 1525.

**SPECIFIC CHARACTER.**—Leaves cordate, quite entire; nerves not prominent; petioles smooth; petals acute; stigmas 8-rayed. (*G. Don.*)

**DESCRIPTION, &c.**—This very pretty little plant has such small petals, that the golden yellow anthers seem to fill up the whole centre of the flower. The receptacle, which connects the different portions of the flower, is square; and this gives the same form to the flower itself. The leaf resembles that of *N. nitida*, the veins both on the under and the upper surface of the leaf being depressed, instead of projecting. The species is a native of the eastern part of Siberia, and it was introduced in 1805. The species is quite hardy; and it requires the same treatment as the other kinds, except that, from its small size, it is more suitable for a cistern than a pond.

N. SANGUINEA, *Hornc.*

This species, which is a native of Georgia, is said to have bright crimson flowers, and to have been introduced in 1828.

## GENUS II.

NUPHAR, *Sibth. and Smith.* THE YELLOW WATER LILY.*Lin. Syst.* POLYANDRIA POLYGYNIA.

**GENERIC CHARACTER.**—Calyx of 5—6 petal-like sepals. Petals 10—18, much smaller than the sepals, with their backs melliferous. Stamens indefinite, which are, as well as the sepals and petals, inserted at the base of the torus, and therefore the berry appears as if it were superior. Stigmas 10—18, radiated. Carpels 10—18, inclosed within the torus.

**DESCRIPTION, &c.**—The yellow water lilies are aquatic herbs, generally with much smaller flowers than those of the genus *Nymphaea*. The rhizoma or main root is thick and horizontal; and the peduncles generally rise a little above the water, so that the flowers do not seem to repose on the surface of the water, as in the white water lily. The name of Nuphar is taken from the Arabic name of *Nymphaea alba*.

1.—NUPHAR LUTEA, *Sib. and Smith.* THE COMMON YELLOW WATER LILY.

**ENGRAVINGS.**—Eng. Bot. t. 159; 2nd ed. t. 766.

**SPECIFIC CHARACTER.**—Calyx of 5 sepals; stigmas entire, 16—20-rayed, profoundly umbilicated; leaves oval-cordate; lobes approximate; petioles triquetrous, with acute angles. (*G. Don.*)

**DESCRIPTION, &c.**—The common yellow water lily is frequent in ponds, lakes, and slow rivers throughout England, where it flowers in July. Its flowers smell like brandy, and combined with the bottle-like shape of its capsules, they have given rise to the common name of brandy-bottle, by which the plant is known in many parts of England. The culture of this plant resembles that of the common water lily.

2.—NUPHAR PUMILA, *Smith.* THE DWARF YELLOW WATER LILY.

**SYNONYME.**—*N. minima*, *Sib.*

**ENGRAVINGS.**—Eng. Bot. t. 2292; 2nd ed. t. 767.

**SPECIFIC CHARACTER.**—Leaves cordate, the lobes somewhat distant;

petioles two-edged. Calyx of 5 sepals. Stigma toothed on the margin. Fruit furrowed upwards.

**DESCRIPTION, &c.**—This species is a native of Scotland, where it is found floating on the Highland lakes, and flowering in July and August. The flowers are of a deep yellow, but so small as to be not worth cultivating.

3.—*NUPHAR KALMIANA*, *Ait.* KALM'S, OR THE CANADIAN YELLOW WATER LILY.

**SYNONYMES.**—*N. lutea*, *var.* *Kalmiana*, *Michx.*; *N. microphylla*, *Pers.*

**ENGRAVING.**—*Bot. Mag.* 1243.

**SPECIFIC CHARACTER.**—Calyx 5-sepaled; stigmas toothed, 8—10-rayed; leaves cordate, somewhat emarginated; lobes somewhat approximate; petioles nearly cylindrical. (*G. Don.*)

**DESCRIPTION, &c.**—A species with very small flowers, resembling *N. pumila*. A native of North America, from Canada and Newfoundland to Carolina and Virginia, in ponds and ditches. Not worth cultivating.

4.—*NUPHAR ADVENA*, *Dec.* THE FOREIGN YELLOW WATER LILY.

**SYNONYMIS.**—*Nymphaea advena*, *Ait.*; *N. trifolia*, *Sal.*; three-coloured water lily.

**ENGRAVINGS.**—*Bot. Mag.* t. 684; and our fig. 1, in Plate 14.

**SPECIFIC CHARACTER.**—Calyx of 6 sepals; petals many, small, shorter, never exceeding the stamens; pericarp furrowed; leaves erect, cordate, lobes divaricate. (*G. Don.*)

**DESCRIPTION, &c.**—The calyx is purple within and green without; the petals are of a bright yellow, and the anthers are red. The flowers, which stand high above the water, are rather large and showy; but they are seldom produced in this country in the open air, unless in very hot summers. The species is a native of North America, from Canada to Carolina, and it was introduced in 1772. There is a variety with the flowers entirely yellow. In our Plate 14, this species bears its old name of *Nymphaea advena*.

NYMPHÆA SAGITTÆFOLIA, *Dec.*

This species has yellow flowers, and arrow-shaped leaves. It is a native of Georgia, whence it was introduced in 1820.

## CHAPTER V.

## PAPAVERACEÆ.

**CHARACTER OF THE ORDER.**—Sepals 2—3; petals 4—8; stamens numerous, hypogynous. Capsules valveless and nearly globose, or elongated and silique-formed.

## GENUS I.

PAPAVER, *Dec.* THE POPPY.*Lin. Syst.* POLYANDRIA MONOGYNIA.

**GENERIC CHARACTER.**—Petals 4, stamens indefinite; style wanting, stigmas 4—20, radiating, sessile, connected, crowning the top of the ovary. Capsule obovate. (*G. Don.*)

**DESCRIPTION, &c.**—The perennial species have all very showy flowers; and two of the most brilliant, viz. *P. bracteatum* and *P. orientale*, have the peculiarity of having the calyx in three sepals instead of in two, as is the case with all the other plants belonging to the genus.

1.—PAPAVER CROCEUM, *Lede.* THE SAFFRON-COLOURED POPPY.

**SYNONYME.**—*P. alpinum*, *Stev.*

**ENGRAVING.**—*Bot. Mag.* t. 3035.

**SPECIFIC CHARACTER.**—Leaves sub-bipinnatifid. Stem naked; calyx and germea densely pilose. Capsule oblong.

**DESCRIPTION, &c.**—This poppy has large and handsome yellow flowers, and it was found by Ledebour in the bed of a river near the Altai Mountains. It was introduced in 1830. It is quite hardy, and flowers in the open border in June. It is most nearly allied to *P. nudicaule*, but is much larger and handsomer than that

species. *P. croceum* is, indeed, by far the handsomest of the yellow poppies; and it is perhaps the only one worth cultivating in an ornamental flower-garden.

#### 2.—PAPAVER RUBRO-AURANTIACUM, Dec. THE ORANGE-RED POPPY.

**SYNONYME.**—*P. nudicaule*, var. *rubro-aurantiacum*, *Fisch.*

**ENGRAVINGS.**—Bot. Mag. t. 2344; and our fig. 3 in Plate 15.

**SPECIFIC CHARACTER.**—Lobules of leaves each terminating in a bristle. Scape covered with adpressed hairs. Rays of the stigma 8.

**DESCRIPTION, &c.**—This species is nearly allied to *P. nudicaule*, which was figured in my volume of *Annuals*, from its generally flowering the first year after sowing, but which is generally considered a perennial. In the present species the stalk is not naked, but, on the contrary, it is covered with short close hairs. Both *P. nudicaule* and this species differ from other perennials, in frequently living three or four years; and also when sown in autumn in often flowering the following June or July. This species is a native of Siberia, and was introduced in 1822.

#### 3.—PAPAVER ALPINUM, Dec. THE ALPINE POPPY.

**SYNONYME.**—*P. Burseri*, *Crantz*.

**ENGRAVINGS.**—Swt. Brit. Flow. Gard. t. 247; and our fig. 2 in Plate 15.

**SPECIFIC CHARACTER.**—Capsule hispid, obovate-oblong, sepals pilose; peduncles rising from the root. Leaves pinnate, leaflets bipinnatifid, leaflets slender, sub-acute.

**DESCRIPTION, &c.**—This dwarf species of poppy has the leaves so remarkably and curiously cut, as to resemble those of a ranunculus more than the leaves of any kind of poppy. The plants are thickened at the base, and send up numerous shoots, so as to produce a very pretty effect when grown in tufts. The plant is a native of Austria, whence it was introduced in 1759. It is hardy, but not long-lived; and it is sometimes killed off by damp, which seems to injure it as much or more than frost. It succeeds best on rock-work, with a flower-pot turned over it in winter.

#### 4.—PAPAVER ORIENTALE, Lin. THE ORIENTAL POPPY.

**SYNONYMES.**—*P. grandiflorum*, *Moench*; *P. spectabile*, *Sal.*

**ENGRAVINGS.**—Bot. Mag. t. 57; and our fig. 1 in Plate 15.

**SPECIFIC CHARACTER.**—Capsules smooth, somewhat globose; sepals

pilose; stem 1-flowered, scabrous, and leafy; leaves pinnate-parted, hispid; lobes oblong, serrated. (*G. Don.*)

**DESCRIPTION, &c.**—The flowers of this species are large, of an intense scarlet, or blood-red, and with a dark purple mark at the base of each petal. Only one flower is produced on each stem, but there are several stems from each root. The calyx has three sepals instead of two, and there are twelve violet-coloured stigmas. The green capsules of this species are said to be eaten by the Turks, though they are acrid, with a very unpleasant taste. The species is a native of Armenia, and it was introduced in 1714.

#### 5.—PAPAVER BRACTEATUM, Lindl. THE BRACTEATED POPPY.

**SYNONYME.**—*P. pulcherrimum*, *Fisch.*

**ENGRAVING.**—Bot. Reg. t. 658.

**SPECIFIC CHARACTER.**—Flowers furnished with bracteas, 4—5

petalled; capsules smooth, obovate; sepals pilose; stem simple, 1-flowered, scabrous, and leafy; leaves and bracteas pinnate-parted, hispid; lobes oblong, serrated. (*G. Don.*)

**DESCRIPTION, &c.**—This is the handsomest of all the poppies. The flowers are very large, still more so than those of the preceding species, but in other respects at first sight they are scarcely to be distinguished asunder; though, on a closer inspection, it will be found that the hairs on the calyx and stem are closely pressed in a slanting direction, while those of the previous species spread horizontally. It also flowers a little earlier. It is a native of Mount Caucasus, and was introduced in 1817.







1. *Paeonia officinalis*. 2. *Papaver rhoeas*. 3. *Papaver rubrum-album* var. 4. *Rosa rugosa* (Lam.) 5. *Agave attenuata*  
6. *Sanguisorba Canadensis*. 7. *Morus coriacea*

Detailed description of the plants



### OTHER SPECIES OF PAPAVER.

There are several other species of perennial poppies, some of which are generally raised from seed, and frequently flower the first year. The most interesting of these are the following:—

P. NUDICAULE, *Dec.*

This species has yellow flowers, and is a native of Siberia, whence it was introduced in 1730. There are two varieties, one with smooth stalks, and the other with short hairy stems.

P. MICROCARPUM, *Dec.*

A species with brownish flowers and very small capsules, a native of Kamtschatka.

P. PYRENIACUM, *Dec.*; P. AURANTIACUM, *Lou.*

There are two varieties of this species, one with red flowers, and the other with yellow ones. Both are natives of the Pyrenees, but the year of their introduction is not known.

P. FLORIBUNDUM, *Dec.*

A biennial from the Levant, with red flowers; introduced in 1815.

### GENUS II.

#### ARGEMONE, *Tour.* THE PRICKLY POPPY.

*Linn. Syst.* POLYANDRIA MONOGYNIA.

**GENERIC CHARACTER.**—Petals 4—6. Stamens indefinite. Style almost wanting. Stigmas 4—5, radiating, concave, fringed. Capsule obovate, prickly, 4—5-valved. (*G. Don.*)

**DESCRIPTION, &c.**—All of the kinds of prickly poppy may be treated as annuals; but *A. grandiflora* is properly a perennial, as it lasts many years, and is generally propagated by dividing the root; as, though when raised from seed, it will flower the first year, it very seldom ripens seed. The prickly poppies are always easily known by their leaves, which are covered with prickles, and which in most of the species have conspicuously white midribs, whence some botanists derive the name, *Argos* signifying white. Others derive it from *Argema*, a cataract of the eye; as the yellow glutinous juice of these plants, particularly of the common kind (*Argemone mexicana*), is reckoned excellent in all diseases of the eye.

#### I.—ARGEMONE GRANDIFLORA, *Swt.* THE LARGE-FLOWERED PRICKLY POPPY.

**ENGRAVINGS.**—*Swt. Brit. Flav. Gard.* t. 226; and our *fig. 5* in *Plate 15.*

**SPECIFIC CHARACTER.**—Leaves sinuated, smooth, spiny-toothed;

nerves unarmed. Flowers panicled, polyandrous, calyx smooth, capsules bluntly-quadrangular, almost unarmed. (*G. Don.*)

**DESCRIPTION, &c.**—This very showy plant has panicles of white flowers, which are often four inches across. The calyx is in three sepals, and armed with short but very strong spines, each of which looks almost like a horn. There are six petals, which overlap each other so much as to make the flower look very nearly round. The leaves are all green, and only prickly at the margin. The plant is a very showy one, and well deserving of cultivation. It is propagated by dividing the root, as it very seldom ripens seeds. It is a native of Mexico, whence it was introduced in 1827. It is quite hardy in British gardens.

## GENUS III.

MECONOPSIS, *Lindl.* THE WELSH POPPY.*Lin. Syst. POLYANDRIA MONOGYNIA.*

**GENERIC CHARACTER.**—Sepals 2, pilose. Petals 4. Stamens indefinite. Style short. Stigmas 5—6, radiated, convex, free. Capsules obovate, 1-celled; valves 5—6, opening at the top; placentas thin, narrow, hardly drawn out on the inside into narrow membranes. (*G. Don.*)

**DESCRIPTION, &c.**—The common Welsh poppy, which is a very elegant plant, a native of North Wales, found only in Alpine situations near water; is the only British species left in this genus; though there are two Californian species, the seeds of which were sent home by Douglas, but from which no plants have been obtained. The name of Meconopsis is derived from *Mekon*, a poppy; and *opsis* likeness.

1.—MECONOPSIS CAMBRICA, *Lindl.* THE COMMON WELSH POPPY.**SYNONYME.**—*Papaver Cambicum*, *Lin.*

**ENGRAVINGS.**—Eng. Bot. t. 66; 2d edit. t. 751; and our *fig. 4* in Plate 15.

**SPECIFIC CHARACTER.**—Capsule smooth. Leaves mostly petiolate, pinnate; the segments jagged and divided. (*Smith.*)

**DESCRIPTION, &c.**—The Welsh poppy is an elegant delicate-looking plant of a somewhat succulent habit, closely resembling the common poppy, except in the colour of its flowers, the presence of a style, and the yellowness of the juice when the stem is broken; that of all the poppies being white. It is quite hardy; but it grows best in a poor (or at least light) soil, and in the shade. When it is to be grown in the common garden mould, a little sand should be added.

## GENUS IV.

SANGUINARIA, *Dill.* THE PUCCOON.*Lin. Syst. POLYANDRIA MONOGYNIA.*

**GENERIC CHARACTER.**—Sepals 2, ovate, caducous. Petals 8—12, acute at both ends; valves deciduous; placentas 2, permanent. Stamens 24. Stigma bisulate. Capsules oblong, 2-valved, ventricose. (*G. Don.*)

**DESCRIPTION, &c.**—There is only one species, a dwarf plant, with white flowers. The name of Sanguinaria, which is from *Sanguis*, blood, alludes to the red juice which abounds in every part of it, and which is seen when the stem or root chances to be broken. Puccoon is the native American name.

1.—SANGUINARIA CANADENSIS, *Lin.* THE CANADIAN BLOODROOT, OR PUCCOON.

**ENGRAVINGS.**—Bot. Mag. t. 162; and our *fig. 6*, in Plate 15.

yielding a red juice when cut. Leaf radical, kidney-shaped, lobed like the leaf of a fig. Scape 1-flowered. (*G. Don.*)

**DESCRIPTION, &c.**—This pretty little plant is a native of Canada, where it is used in medicine as an emetic. It is a very pretty little plant, quite hardy, which should be planted in the front of a flower-border, where it will flower from March till May, its principal fault being that its petals fall very soon, like those of the poppies and other plants belonging to the same order. The root of this plant when broken appears to bleed profusely, from the great quantity of red juice which it emits; and hence the popular name of Bloodroot.

## GENUS V.

## MACLEAYA, R. Br. THE MACLEAYA.

*Lin. Syst.* POLYANDRIA MONOGYNIA.

**GENERIC CHARACTER.**—Sepals 2, caducous. Petals none. Stamens 24—28. Stigmas 2, spreading. Capsule elliptical, with many-seeded placentas. Seeds fixed to parietal placentas. Albumen fleshy. Embryo very minute, erect. (*G. Don.*)

**DESCRIPTION, &c.**—There is only one species in this genus, which was separated from *Bocconia*, and named in honour of Alexander MacLeay, Colonial Secretary in New South Wales.

## 1.—MACLEAYA CORDATA, R. Br. THE CORDATE-LEAVED MACLEAYA.

SYNONYME.—*Bocconia cordata*, Willd.

ENGRAVINGS.—Bot. Mag. t. 1905; and our fig. 7 in Plate 15.

**SPECIFIC CHARACTER.**—Leaves roundish, cordate, obsoletely lobed, glaucous on the under surface. Flowers disposed in large panicles.

**DESCRIPTION, &c.**—This species is said to be “a very ornamental, stately, herbaceous plant, when grown in a rich soil.” It is a native of China, whence it was introduced in 1795. It flowers in June and July, and it is propagated by dividing the roots in spring. This plant is not suitable for a small garden, as it grows from three to five feet high, and spreads proportionately.

## CHAPTER VI.

## FUMARIACE.E.

**CHARACTER OF THE ORDER.**—Sepals 2. Petals 4, the outer two or one of them saccate at the base; inner two callos, and coloured at the apex, where they unite, inclosing the anthers and the stigma. Stamens 6, in two parcels, or rarely separate. Anthers some 1-celled, others 2-celled. Ovary superior, 1-celled; ovules horizontal; style filiform; stigma with two or more lobes. Fruit various. Seeds horizontal, shining, crested.

**DESCRIPTION, &c.**—The plants belonging to this order are easily known by the very singular shape of their flowers. They differ from *Papaveraceae*, to which they are nearly allied, in their juice being watery, and their petals irregular. The word *Fumaria*, which gives its name to the order, is derived from *Fumus*, smoke, alluding to the smell of the British plants included in the genus *Fumaria*.

## GENUS I.

## DIELYTRA, Borch. THE DIELYTRA.

*Lin. Syst.* DIADEPHIA HEXANDRIA.

**GENERIC CHARACTER.**—Petals 4, the outer two equally spurred or gibbous at the base. Stamens 6, altogether free, or approximating into two bundles, or joined at the top, and free at the base. Capsules 2-valved, many-seeded. (*G. Don.*)

**DESCRIPTION, &c.**—The species included in this order are all perennial plants, which were formerly included in the genus *Fumaria*, and afterwards in that of *Corydalis*. The name of *Dielytra* is from *dis*, double, and *elytron*, a sheath, alluding to the two sheath-like spurs at the base of the flower. The flowers of the species are produced in racemes, and are yellowish or pinkish, and the roots are generally tuberous. The leaves nearly all spring from the root, and they are generally on long stalks, and much cut. The species are all quite hardy, and of very easy culture, being easily increased either by dividing the root, or by seeds.

1.—*DIELYTRA CUCULLARIA*, *Dec.* THE HOODED DIELYTRA.

**SYNONYMS.**—*Fumaria cucullaria*, *Lin.*; *Corydalis cucullaria*, *Pers.*; *Cucullaria bulbosa*, *Raf.*; Dutchman's Breeches, *Amer.*; two-spurred Fumitory.

**ENGRAVINGS.**—Bot. Mag. t. 1127; and our *fig. 6* in Plate 16.

**SPECIFIC CHARACTER.**—Spurs two, straight, acute; scape naked; raceme simple.

**DESCRIPTION, &c.**—The flowers of this species are very remarkable in their shape and colour. The two horns or spurs of the flower are white, tipped with bright yellow at the upper end. Notwithstanding the oddness of their shape, the flowers are pretty from the brilliancy of the white spurs, and the contrast it affords to the bright yellow of the upper part of the flower. The root is tuberous, and very bitter. This species is a native of North America, whence it was introduced in 1731. It grows nearly a foot high, and flowers from May to July. It grows freely in any light rich garden soil, and forms a very pretty border flower.

2.—*DIELYTRA FORMOSA*, *Dec.* THE BEAUTIFUL DIELYTRA.

**SYNONYMS.**—*Fumaria formosa*, *Andr.*; *Corydalis formosa*, *Pursh.*; *C. biaurita*, *Horn.*; bluish Fumitory.

**SPECIFIC CHARACTER.**—Spurs 2, short, somewhat incurved, blunt; scape naked; racemes rather compound; stigma 2-angled. (*G. Don*)

**ENGRAVINGS.**—Bot. Rep. t. 393; Bot. Mag. t. 1335; and our *fig. 5* in Plate 16.

**DESCRIPTION, &c.**—This very beautiful species was one of the many showy plants discovered by the late Mr. Menzies at Nootka Sound; and it was introduced by him in 1796, being first planted in the royal garden at Kew. It is very ornamental, from its beautiful pink flowers. The root is fleshy and creeping, so that a single plant soon spreads into a tuft. It is quite hardy, and it will grow well in any common garden soil.

3.—*DIELYTRA EXIMIA*, *Dec.* THE CHOICE DIELYTRA.

**SYNONYMS.**—*Fumaria eximia*, *Ker.*  
**ENGRAVINGS.**—Bot. Reg. t. 50.

**SPECIFIC CHARACTER.**—Spurs 2, somewhat incurved, blunt, short; scape naked; racemes compound; stigma four-angled. (*G. Don*)

**DESCRIPTION, &c.**—This species is nearly allied to the last, but the flowers are larger and more purple. It is a native of North America, whence it was introduced by the botanical collector, Lyon, in 1812. In the Botanical Register it is called “the most ornamental plant of the genus; and in a situation that suits it, it soon forms a large close tuft, throwing up stems of nearly three feet in height, with bunches of flowers in proportion. The foliage is of considerable breadth, and of a peculiarly lively and tender green.” It blooms in May and June, is perfectly hardy; and it is propagated by dividing the tuberous knots that compose the root.

## OTHER SPECIES OF DIELYTRA.

D. SPECTABILIS, *Dec.*

A very showy plant, with flowers nearly an inch long, closely allied to *D. eximia*. A native of Siberia, introduced in 1816.

D. BRACTEOSA, *Dec.*

This species is nearly allied to *D. cucullaria*, and the flowers are white, tipped with yellow. It is a native of North America, and was introduced in 1823.

D. TENUIFOLIA, *Dec.*

The flowers are very large, and of a pale pink, tipped with a darker and more intense colour. It is a native of Kamtschatka, and was introduced in 1824.

D. CANADENSIS, *Dec.*

A native of Canada, with white or purple flowers, and glaucous leaves ; introduced in 1823.

D. LACHENALIÆFLORA, *Dec.*

A native of Siberia, nearly allied to *D. tenuiflora*, but with smaller flowers. A native of Siberia, introduced in 1824.

## GENUS II.

CORYDALIS, *Dec.* THE CORYDALIS.

*Lin. Syst.* DIADELPHIA HEXANDRIA.

**GENERIC CHARACTER.**—Petals 4, the upper one of which has a spur at the base ; sometimes all joined at the base, and sometimes with the lower one free, and the rest joined ; but when they begin to decay,

they all become free and deciduous. Stamens didelphous. Capsules 2-valved, compressed, oval-oblong, linear, many-seeded, smooth.

**DESCRIPTION, &c.**—The species comprised in this genus have only a single spur, drawn out at the base ; and hence the genus is called *Corydalis*, which signifies a lark, from the long spur of the flower bearing some resemblance to that of the bird.

1.—CORYDALIS LONGIFLORA, *Pers.* THE LONG-FLOWERED CORYDALIS.

**SYNONYMS.**—*Fumaria longiflora*, *Hilld.* ; *F. Schongini*, *Pall.* ; *F. caudata*, *Lam.* ; *Corydalis caudata*, *Pers.*

under the leaves ; leaves bi-ternate ; segments three-parted ; lobes oval-oblong ; bracteas oblong, entire ; racemes elongated, ten-flowered ; style longer than the pedicels. (*G. Don.*)

**SPECIFIC CHARACTER.**—Stem simple, furnished with leafy scales

**DESCRIPTION, &c.**—This species has delicate flowers with long tails, white, tipped with pink. The leaves are glaucous, and the root is a globular tuber about the size of a hazel-nut. The leaves all spring from the root. The species is a native of the Altaic Mountains, whence it was introduced in 1832. It is quite hardy.

2.—CORYDALIS TUBEROSA, *Dec.* THE HOLLOW-ROOTED FUMITORY.

**SYNONYM.**—*Fumaria cava*, *Lin.*

nate ; segments cuneated, cleft ; bracteas ovate, entire ; root hollow.

**ENGRAVING.**—Bot. Mag. t. 232.

(*G. Don.*)

**SPECIFIC CHARACTER.**—Stem simple, not scaly ; leaves 2, bi-ter-

**DESCRIPTION, &c.**—This species is remarkable for having a hollow root ; the tuber of which it consists being, as Parkinson observes, “like a shell, every part of which when broken will grow.” This hollow tuber sometimes attains a large size, but it never thickens, the cavity increasing in exact proportion to the size of the outer covering. The flowers are pink, with very large greenish bracts, which are entire, instead of being cut as in some of the species. It is a native of Germany, whence it was introduced before 1596. There are three varieties ; the flowers of one being white, another pink, and the third purple. They are all quite hardy in British gardens, where they will flower from March till the beginning of May ; but as they rarely produce any seed, they are propagated by dividing the root. Any garden soil will be suitable, but a shady situation is to be preferred. The pink-flowered kind is most common, the white and purple varieties being very rare.

## 3.—CORYDALIS BULBOSA, Dec. THE SOLID-ROOTED FUMITORY.

**SYNONYME.**—*Fumaria solidia*, *Smith*; *C. solidia*, *Smith*; *C. Halleri*, *Willd.*

**ENGRAVINGS.**—Eng. Bot. t. 1471; 2nd edit. t. 983.

**SPECIFIC CHARACTER.**—Stem simple, erect, scaly under the lower

leaf; leaves three or four, stalked, bi-ternate; segments cuneated or oblong, and as well as the bracteas cut at the top. Root solid. (G. Don.)

**DESCRIPTION, &c.**—This species, though nearly allied to the last, differs in the tuber being solid, and in the bracteas being cut. The flowers are large and purple, and the leaves are glaucous. It rarely bears seed, but it increases so rapidly by means of its tubers, that when once introduced, it is not easily eradicated. It will grow in any common garden soil, and it flowers in April and May. It is said to be a native of Britain, but it is very doubtful whether it is so really.

## 4.—CORYDALIS BRACTEATA, Dec. THE BRACTEATED CORYDALIS.

**SYNONYME.**—*Fumaria bracteata*, *Steph.*

**ENGRAVING.**—Bot. Mag. t. 3242.

**SPECIFIC CHARACTER.**—Stem simple, erect, scaly near the base;

leaves two, bi-ternate; segments cleft into linear lobes; bracteas cuneate, profoundly cut at the apex, longer than the peduncles; spurs straight, long. (G. Don.)

**DESCRIPTION, &c.**—A very singular-looking plant, which would scarcely be recognised at first sight as belonging to the genus. The flowers are large, of a pale yellow, and with a large gaping mouth; and the leaves are shaped like fans. The species is a native of the Altaic Mountains, and it was introduced in 1832.

## 5.—CORYDALIS NOBILIS, Dec. THE NOBLE CORYDALIS.

**SYNONYME.**—*Fumaria nobilis*, *Willd.*; Great-flowered Fumitory.

**ENGRAVINGS.**—Bot. Mag. t. 1953; Bot. Reg. t. 395; and our fig. 1 in Plate 16.

**SPECIFIC CHARACTER.**—Stem simple, erect, not scaly; leaves bi-pinnate; segments cuneated, cut at the top; bracteas acute, entire, or cut. (G. Don.)

**DESCRIPTION, &c.**—A strong-growing plant, with numerous stem leaves, and a thick succulent stem. The flowers all grow on one side, and in a cluster together. This species does not flower till May. It is a native of Siberia, introduced in 1783; and being quite hardy, it will grow in any soil and situation. The root is tuberous, and the species is propagated by dividing it. The flowers are very large, and they have very nearly the fragrance of the cowslip.

6.—CORYDALIS AUREA, *Willd.* THE GOLDEN CORYDALIS.

**SYNONYME.**—*Fumaria aurea*, *Ker.*

**ENGRAVING.**—Bot. Reg. t. 66.

**SPECIFIC CHARACTER.**—Stem diffuse, branched; leaves glaucous,

bi-pinnate; leaflets pinnatifid and cut; lobes oblong-linear; bracteas lanceolate-linear, acuminate, denticulated, and, as well as the linear ternate capsules, four times longer than the pedicels. (G. Don.)

**DESCRIPTION, &c.**—This species is a pretty little plant, with golden yellow flowers, pink stems, and glaucous leaves. It is a native of North America, whence it was introduced in 1812. It is a very pretty plant for a flower-garden, from the great profusion and golden hue of its flowers; but it is not so hardy as some of the other kinds, as it is easily destroyed either by a very severe or a very wet winter.

## 7.—CORYDALIS LUTEA, Dec. THE YELLOW CORYDALIS.

**SYNONYMES.**—*Fumaria lutea*, *Lin.*; *Corydalis capnoides*, *Mao.*

**ENGRAVINGS.**—Eng. Bot. t. 588; 2nd edit. t. 984.

**SPECIFIC CHARACTER.**—Stem branched, diffuse; leaves bi-ternate;

segments obovate, cuneated, trifid; bracteas linear-subulate, three times shorter than the pedicel; pods nearly cylindrical, narrow, shorter than their pedicels. (G. Don.)

**DESCRIPTION, &c.**—This species is nearly allied to the last, but the flowers are of a much paler yellow, and not so abundant. It is frequently found on old walls in England, but it is a doubtful native. The root is fibrous









and tufted, and it insinuates itself firmly between the crevices of bricks and stones. It is thus well adapted for rockwork; but it is apt to become troublesome in borders, as it ripens abundance of seed, which it sows itself when ripe. It grows best in dry situations, as even this species may be killed by a damp winter.

#### OTHER SPECIES OF CORYDALIS.

##### C. PAUCIFLORA, *Dec.*

A native of Siberia, with large purple flowers; introduced in 1823.

##### C. MARSCHALLIANA, *Dec.*

A native of Tauria, introduced in 1823, with striped flowers.

##### C. FABACEA, *Dec.*

The flowers are large and purple. The species is a native of Germany; introduced in 1815.

##### C. ANGUSTIFOLIA, *Dec.*

Flowers purple. A native of Iberia; introduced in 1823.

##### C. PÆONIÆFOLIA, *Dec.*

A native of Siberia, with purple flowers; introduced in 1823.

##### C. CAPNOIDES, *Pursh.*

A species with white flowers, from the South of Europe; introduced before 1596.

##### C. SIBERICA, *Dec.*

A native of Siberia, with yellow flowers; introduced in 1825.

##### C. URALENSIS, *Dec.*

A native of Siberia, with yellow flowers; introduced in 1823.

There are several other species, but they are rarely met with.

#### CHAPTER VII.

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#### CRUCIFERÆ.

**CHARACTER OF THE ORDER.**—Sepals four. Petals four, cruciate. Stamens six, hypogynous, tetradynamous. Fruit a silique, or silicle, rarely a valveless pericarp. (*G. Don.*)

**DESCRIPTION, &c.**—Cruciferous plants are so called from the four petals of their flowers being in the form of a cross; cruciferous signifying cross-bearing. All the species thrive most in rich soil, abounding with animal manure; and hence the great improvement produced in the culinary plants belonging to the order by cultivation. The wild cabbage and the wild turnip are harsh and stringy plants, and quite unlike the plants produced from them by sowing the seeds for several generations in rich soil. The ornamental flowers belonging to the order are also very greatly improved by planting in garden mould rendered rich by manure.

## GENUS I.

BARBAREA, *R. Br.* THE HERB OF ST. BARBARA, OR WINTER CRESS.*Lin. Syst.* TETRADYNAZIA SILIQUOSA.

**GENERIC CHARACTER.**—Silique 4-sided, two-edged; valves concave-keeled, awnless at the apex. Calyx equal at the base. Seeds disposed in one series. (*G. Don.*)

**DESCRIPTION, &c.**—Most of the species belonging to this genus are cultivated only as affording a kind of winter or early spring salad; but the double-flowered variety of *B. vulgaris*, which is commonly called the double-yellow rocket, is very ornamental. The name of *Barbarea* alludes to the plant being vulgarly called the Herb of St. Barbara. The other species possess no beauty in their flowers.

1.—BARBAREA VULGARIS, *R. Br.* THE COMMON HERB OF SANT BARBARA,  
OR YELLOW ROCKET.

**SYNONYMS.**—*Erysimum Barbarea*, *Lin.*; *E. lyraefolium*, *Stok.* | upper leaves obovate, toothed, pinnatifid. Siliques trigonal, linear,  
**ENGRAVINGS.**—Eng. Bot. t. 413, 2d edit.; and our fig. 2 in Plate 17. | pointed with the style. (*G. Don.*)

**SPECIFIC CHARACTER.**—Lower leaves lyrate, terminal lobe roundish;

**DESCRIPTION, &c.**—The species is a bitter mucilaginous herb, common in various parts of Europe, particularly in Great Britain, always growing in moist waste places. There are two varieties—one a slender plant of little beauty, and the other the double-yellow rocket of the gardens. This variety is a very showy border plant, and it may be propagated either by cuttings or suckers, or by dividing the root. It should be grown in a rich and somewhat moist soil; or if the soil be dry it should be frequently watered.

## GENUS II.

ARABIS, *Lin.* THE WALL-CRESS.*Lin. Syst.* TETRADYNAZIA SILIQUOSA.

**GENERIC CHARACTER.**—Siliques linear, with flat 1-nerved valves. Seeds oval or orbicular, compressed, one row in each cell. Cotyledons flat. (*G. Don.*)

**DESCRIPTION, &c.**—The plants belonging to this genus are all dwarf, with very pretty little flowers, which are produced in such profusion as to produce masses of colour. The species are thus exceedingly well adapted for planting on rockwork, and in geometric flower-gardens, where the object is for each bed to present a distinct mass of colour. The name *Arabis* is said to be derived from Arabia, the native place of some of the species; but if so, it must be *Arabia Petrea*, as all the plants included in the order require to be planted in dry, stony, or sandy soil. All the species are quite hardy, and they are all propagated by dividing the roots.

1.—ARABIS ROSEA, *Dec.* THE ROSE-COLOURED ARABIS.

**ENGRAVINGS.**—Bot. Mag. t. 3246; and our fig. 6 in Pl. 17.

Pedicels longer than the calyx. Siliques linearly-elongated, sub-atten-

**SPECIFIC CHARACTER.**—Stem-leaves oblong, somewhat stem-clasping, sub-cordate, sinuately-dentate; pubescently rough, with branched hairs.

uated, erect.

**DESCRIPTION, &c.**—This species has an erect stem, three or four inches high, which is quite downy. The leaves are oblong, deeply toothed, or scalloped, slightly clasping the stem at the base, and covered with little stars

of branched hairs. The flowers are rather large ; and they are disposed in dense, rounded racemes. The seed-pods are very long and slender, and they appear disposed in tufts like little rods, about three inches in length. The calyx is large, and the sepals erect and pointed ; while the petals are somewhat recurved. The species is a native of Calabria, whence it was introduced in 1832. It appears hardy, but it seldom flowers well, unless slightly protected during winter ; as its flowers appear in February, and its seeds ripen in March.

## 2.—ARABIS ALPINA, *Lin.* THE ALPINE WALL-CRESS.

**SYNONYM.**—*Draba alba*, *Baumk.*

**ENGRAVINGS.**—Bot. Mag. t. 226 ; and our fig. 5 in Pl. 17.

**SPECIFIC CHARACTER.**—Leaves many-toothed, lanceolate, acute,

villous with branched hairs, radical ones somewhat stalked, caudine ones cordate, clasping the stem, pedicels longer than the calyx, which is smoothish. (*G. Don.*)

**DESCRIPTION, &c.**—This is a pretty little hardy plant, with white flowers, which it produces in great abundance in April and May. It is a native of the mountainous parts of Switzerland, Austria, and Lapland ; and it was certainly introduced before 1658, as its name is included in a list of plants growing in the Bot. Gard. at Oxford in that year ; indeed in some catalogues it is said to have been introduced in 1596. There are two varieties, one with fewer leaves, and consequently less ornamental ; while the other is a dwarf plant but just rising above the ground. Both the species and the varieties are quite hardy, and they will grow in any soil or situation ; though they flower best on rockwork, or in a warm, rather dry border, exposed to the sun.

## 3.—ARABIS ALBIDA, *Stev.* THE WHITE WALL-CRESS.

**SYNONYMS.**—*A. canescens*, *Willd.* ; *A. alpina*, *Pall.* ; *Cheiranthus mollis*, *Hottie* ; White *Alvissum*.

**ENGRAVING.**—Bot. Mag. t. 2046.

**SPECIFIC CHARACTER.**—Leaves few-toothed, hoary, or downy, with branched hairs ; radical leaves obovate-oblong, caudine ones cordately-sagittate, clasping the stem ; pedicels longer than the calyx. (*G. Don.*)

**DESCRIPTION, &c.**—This and the preceding species are two of the most valuable dwarf perennials in British flower-gardens, as they grow so compactly and form such a brilliant mass of white as to be useful in all cases where the beds form a regular figure. *A. albida* is a native of Tauria, whence it was introduced in 1798. It is quite hardy, and requires no care in its cultivation after its first planting. It is propagated by dividing the root ; and it will flower from February to June.

## OTHER SPECIES OF ARABIS.

There are several British species of this genus, which are rather pretty, particularly the common rock-cress, *A. petraea* ; but they are scarcely worth the trouble of cultivating. *A. collina*, a Neapolitan species, and some other kinds that are natives of Europe, have pretty flowers when viewed separately ; but they are so small, and grow so far apart on a long slender stalk, as to have only a weedy effect in a garden.

## GENUS III.

### CARDAMINE, *Lin.* THE BITTER CRESS.

*Lin. Syst.* TETRADYNAMIA SILIQUOSA.

**GENERIC CHARACTER.**—Siliques linear, with flat nerveless valves, usually opening with elasticity. Seeds in one series, ovate, not margined. Umbilical cord slender. Cotyledons accumbent. (*G. Don.*)

**DESCRIPTION, &c.**—The prettiest of the numerous species of this genus are British plants, which are rarely cultivated in gardens, from their great abundance in the open country. The prettiest of these British species are

*C. bellidifolia*, which scarcely rises higher than a tuft of moss, and yet has daisy-like leaves, and produce abundance of lively-looking white flowers. The common Lady's Smock (*C. pratensis*) takes its English name from its flowers being produced in such abundance in the meadows as to give them the appearance of a bleaching-ground, or of being covered with clothes from a wash, laid on the grass to dry. This plant is also sometimes called cuckoo-flower, from its blossoming when the cuckoos sing. Of the species which are natives of the South of Europe, the handsomest are *C. asarifolia*, Bot. Mag. t. 1735; and *C. trifolia*, Bot. Mag. t. 452; both marsh plants, which should be grown in bog earth, in moist, shady situations. All the Cardamines are anti-scorbutic; and they are said to be very efficacious in diseases of the heart. The derivation of the name Cardamine is from *kardia*, the heart, and *damao*, to subdue. The plants are warmly stomachic, and they have the flavour of water-cress. The flowers of all the species are either white or reddish; and they are disposed in erect, terminal racemes, without bracts.

## GENUS IV.

DENTARIA, *Dec.* TOOTHWORT, OR CORAL-ROOT.*Lin. Syst.* TETRADYNAZIA SILIQUOSA.

**GENERIC CHARACTER.**—Siliques narrow-lanceolate, tapering, valves flat, ribless, generally separating elastically. Seed-stalks broad. Seeds ovate, not bordered, in one row. Cotyledons accumbent. (*Smith.*)

**DESCRIPTION, &c.**—The plants contained in this genus are generally natives either of Europe or North America. They have all fleshy under-ground stems or main roots, which have a pungent taste, and which are sometimes used instead of pepper and other condiments in the United States. These fleshy roots are irregularly toothed, and hence the name of the genus, from *dens*, a tooth. The flowers are generally crimson or purplish; but they are sometimes white.

1.—DENTARIA BULBIFERA, *Smith.* THE BULB-BEARING DENTARIA.

ENGRAVINGS.—Eng. Bot. t. 309, 2d ed. t. 921.

SPECIFIC CHARACTER.—Stem simple. Lower leaves pinnated, upper ones simple, with axillary bulbs. (*Smith.*)

**DESCRIPTION, &c.**—This very curious British plant, though it has a creeping under-ground stem, indented with marked and very conspicuous teeth, frequently propagates itself by bulbs, which it produces in the axils of its leaflets. These bulbs are oval, scaly, and dark purple; and, when ripe, they drop off, serving thus to propagate the plant, which rarely matures seeds. The flowers bear considerable resemblance to those of the common stock. They are of a reddish purple, and appear in April and May. This species, though ornamental, is rarely cultivated, as it will only thrive in a moist shady situation.

2.—DENTARIA PENTAPHYLLA, *Sims.* FIVE-LEAVED TOOTHWORT.

**SYNONYMS.**—*D. pentaphyllum*, *Ait.*; *D. digitata*, *Lom.*; *Cardamine pentaphylla*, *R Br.*, *Saxifraga denticulata*, *Gesn.*; *Viola dentaria*, *Dod.*; *Alabastrites nemoralis*, *Lob.*

ENGRAVINGS.—Bot. Mag. t. 2202; and our fig. 5 in Plate 17.

**SPECIFIC CHARACTER.**—Leaves 3, in a whorl, or alternate, stalked, pinnate; segments 7 or 9; approximate, lanceolate, acuminate, serrated. (*G. Don.*)

**DESCRIPTION, &c.**—A showy dwarf plant, the flowers of which are very curiously veined. It is a native of France, and other parts of central Europe, whence it was introduced before 1659. It requires a light sandy soil, and a moist shady situation; and it is always increased by dividing the roots, as it very seldom ripens seeds.







1 *Vesicularia ubriculatum* - 2 *Bartsia vulgaris* - 3 *Stylosanthes gracilis* - 4 *Sugadom nitidum*  
5 *Dentaria pentaphylla* 6 *Arabis rosea* 7 *Ornithogalum* 8 *Lathyrus delphinium*  
9 *Stachys sylvatica* 10 *Thlaspi arvense*



3.—*DENTARIA DIPHYLLA*, *Michaux.* AMERICAN PEPPERWORT.

ENGRAVING.—Bot. Mag. t. 1465.

SPECIFIC CHARACTER.—Cauline leaves 2, alternate, on short stalks, | cut into three ovate-lanceolate, grossly and unequally serrated lobed segments. (*G. Don.*)

DESCRIPTION, &c.—This plant grows chiefly in Canada, but it is found in other parts of North America. The inhabitants dry the root and use it instead of mustard or pepper. The flowers are white, tinged with pink, and the leaves are large. It is a hardy plant, and may be propagated by dividing its roots.

OTHER SPECIES OF *DENTARIA*.D. *POLYPHYLLA*, *Dec.*

A native of Hungary, introduced in 1817. The flowers are striped.

D. *ENNEAPHYLLA*, *Dec.*

A native of Austria, with white flowers, introduced in 1656.

D. *MAXIMA*, *Dec.*

A species with large white flowers; a native of North America, introduced in 1823.

D. *LACINIATA*, *Dec.*

The flowers are white. The species is a native of North America, and was introduced in 1823.

Besides the above, there are several other species; several of which are natives of Siberia. There are also some other genera nearly connected with the above, which are not worth enumerating, because they are not sufficiently ornamental.

## GENUS V.

*AUBRIETIA*, *Adams.* THE AUBRIETIA.*Lin. Syst.* TETRADYNAZIA SILICULOSA.

GENERIC CHARACTER.—Silicle oblong, with convex valves. Seeds entire or angularly toothed, which are covered with simple and not margined. Calyx bisaccate at the base. Petals entire. Smaller stamens toothed. Small evergreen pilos herbs, with ovate or oblong,

entire or angularly toothed leaves, which are covered with simple and branched hairs. Racemes opposite the leaves and terminal, lax, fine-flowered. Pedicels filiform, bractless. (*G. Don.*)

DESCRIPTION, &c.—Aubrietia is named in honour of M. Aubriet, a famous French botanical draughtsman. The species are dwarf hardy plants.

1.—*AUBRIETIA DELTOIDEA*, *Dec.* THE SPREADING AUBRIETIA.

SYNONYMES.—*Alyssum deltoideum*, *Lin.*; *Leucojum saxatile*, *Bank.*; *Farseta deltoidea*, *R. Br.*; *Vesicaria deltoidea*, *Poir.* ENGRAVINGS.—Bot. Mag. t. 126; and our fig. 8 in Plate 17.

SPECIFIC CHARACTER.—Pedicels longer than the calyx. (*G. Don.*)

DESCRIPTION, &c.—This plant, though not remarkably handsome, has the advantage, if we may call it so, of beginning to flower in March, and continuing to April or May, and if in a favourable situation, during most of the summer. Being properly a rock plant, with little care it will form a neat tuft on rockwork without encroaching on the others. It may be easily propagated by dividing its roots in autumn, or by cuttings. It is very hardy. It is a native of Naples, and was introduced in 1710.

2.—*AUBRIETIA PURPUREA*, *Dec.* THE PURPLE AUBRIETIA.

**SYNONYMES.**—*Arabis purpurea*, *Smith*; *Draba hesperidifolia*, *Lam.*    **ENGRAVING.**—*Swt. Brit. Flow. Gard.*  
**SPECIFIC CHARACTER.**—Pedicels shorter than the calyx. (*G. Don.*)

**DESCRIPTION, &c.**—This pretty little plant has the same advantage as the other, and is very much like it, with the exception that the flower is smaller, and it is less hardy; it stands our winters very well unprotected, growing in light sandy soil. It may be propagated by cuttings under a hand-glass, or seed; if the cuttings be kept in small pots until they have taken root, they will flower well in the open air. It is also more straggling than *A. deltoidea*. It is a native of Bithynia, whence it was introduced in 1821.

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## GENUS VI.

VESICARIA, *Lam.* THE VESICARIA.

*Lin. Syst.* TETRADYDAMIA SILICULOSA.

<b>GENERIC CHARACTER.</b> —Silicle globose, inflated, with hemispherical valves. Seeds many, generally beyond 8, usually margined. Petals entire. Stems shrubby at the base, branched, round. Leaves oblong,	or linear-entire, or somewhat sinuated. Racemes terminal. Pedicels bractless, filiform. ( <i>G. Don.</i> )
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**DESCRIPTION, &c.**—This genus takes its name from *vesica*, a blister or bladder, in allusion to the inflated pods. There are several species, all with yellow flowers; but only a few of them are cultivated in gardens.

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1.—VESICARIA UTRICULATA, *Lam.* THE GLOBE-PODDED VESICARIA.

<b>SYNONYMES.</b> — <i>Alyssum utriculatum</i> , <i>Lin.</i> ; <i>A. Oederi</i> var. <i>Durand.</i> ; <i>Myagrum utriculatum</i> , <i>Berg.</i> ; Bladder-podded Alyssum. <b>ENGRAVING.</b> — <i>Bot. Mag.</i> t. 130; and our <i>fig.</i> 1 in Plate 17.	<b>SPECIFIC CHARACTER.</b> —Calyx bisaccate at the base; leaves somewhat oblong, quite entire, smooth; lower ones ciliated, somewhat spatulate. ( <i>G. Don.</i> )
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**DESCRIPTION, &c.**—A very handsome hardy plant, the flowers and general appearance of which greatly resemble those of the wallflower; except in being always yellow, and their being succeeded by membranaceous globular pods, which, each retaining its needle-like style, have a very singular appearance. The species is a native of the Levant, whence it was introduced in 1739. It should be grown in a dry soil, and it may be propagated by cuttings, or seeds, which it ripens in great abundance.

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2.—VESICARIA ARENOSA, *Rich.* THE SAND VESICARIA.

<b>SYNONYME.</b> — <i>V. urtica</i> , <i>Hook.</i> <b>ENGRAVING.</b> — <i>Bot. Mag.</i> t. 2882. <b>SPECIFIC CHARACTER.</b> —Lower leaves somewhat rhomboid, obsoletely	sinuate-toothed, grey with stellate down; stem round, suffruticose at the base. Pods globoso, pubescent. ( <i>G. Don.</i> )
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**DESCRIPTION, &c.**—A pretty little plant, with small yellow flowers; very suitable for rockwork, as it grows in spreading tufts. It is a native of North America, within the Arctic zone; and it was introduced in 1829.

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## OTHER SPECIES OF VESICARIA.

Only two other species have been introduced, viz.:—*V. Ludoviciana*, a native of North America, in 1825; and *V. sinuata*, a native of Spain, introduced before 1596.

## GENUS VII.

ALYSSUM, *Lin.* MADWORT.*Lin. Syst.* TETRADYNAZIA SILICULOSA.

**GENERIC CHARACTER.**—Silicle roundish. Seeds two in each cell. Calyx equal at the base. Petals emarginate. Stamens all or some of them toothed.

**DESCRIPTION, &c.**—The perennial species belonging to this genus, differing slightly from the annual kinds in the seeds and seed-pods, have been made into a new genus called *Adyseton*, which has been adopted by some botanists, though not generally. As I exceedingly dislike changing established names, especially when they have become so popular as that of *Alyssum saratile*, I have retained the old name, though all the plants I shall describe are included in the new genus. *Alyssum* is derived from *α*, not, and *λυσα*, rage; and it is applied to these plants from their supposed power of calming madness.

1.—ALYSSUM SAXATILE, *Lin.* THE ROCK ALYSSUM:

**SYNONYMS.**—*Adyseton saxatile*, *Scop.*; *Aurinia saxatilis*, *Dess.*; *Alyssum Cisticolum*, *Tourn.*; *Thlaspi luteum*, *Boce.*; *Yellow Alysum*, *Corbille d'Or*.

**ENGRAVINGS.**—Bot. Mag. t. 159, and our fig. 3 in Plate 17, under the name of *Adyseton saratile*.

**DESCRIPTION, &c.**—Few plants are better known or more valued in gardens than *Alyssum saratile*. Its brilliant yellow flowers, which are produced in a dense mass, and its dwarf growth, render it particularly useful for either regular flower-beds or rock-work; and there are few prettier border flowers. It is quite hardy, and requires no other care than planting it in a light dry soil. It is propagated by dividing the root, or by cuttings, which strike readily in sand.

2.—ALYSSUM MONTANUM, *Lin.* THE MOUNTAIN ALYSSUM.

**SYNONYMS.**—*Adyseton montanum*, *G. Don*; *Clypeola montana*, *Crantz*.

**ENGRAVINGS.**—Bot. Mag. t. 419; and our fig. 4, in Plate 17, under the name of *Adyseton montanum*.

**DESCRIPTION, &c.**—This species is very small, and rather pretty; it is indeed very much like *A. saratile*, except in being smaller in all its parts. It is a native of the mountains of Switzerland, whence it was introduced in 1759. It is quite hardy; and as it is of slow growth, and only requires to be grown in dry sandy soil, it is very suitable for rock-work. It is generally propagated by cuttings.

**SPECIFIC CHARACTER.**—Stems substrigose at the base, somewhat corymbose; leaves lanceolate, entire, clothed with hoary tomentum. Stamens furnished with a tooth on each side. Pods obovate, orbicular, 2 seeded; seeds magnified.

## OTHER SPECIES OF ALYSSUM.

These are very numerous, and they are all hardy and with yellow flowers. They are not worth, however, enumerating, as they are very seldom seen in British gardens.

## GENUS VIII.

DRABA, *Lin.* THE WHITLOW GRASS.*Lin. Syst.* TETRADYNAMEA SILICULOSA.

**GENERIC CHARACTER.**—Silicle sessile, oval or oblong, with flat or convex valves. Seeds many, not margined. Calyx equal at the base. Petals entire. Stamens all toothless. (*G. Don.*)

**DESCRIPTION, &c.**—Most of the species are little tufted evergreen plants, the leaves of which are generally ovate, and the flowers in terminal racemes. The flowers are white, or yellow. Generally only one species is cultivated in gardens; though the British kind, *D. aizoides*, has a very pretty effect in a tuft. *D. pyrenica*, which looks like a miniature house-leek, and the flowers of which are either rose-coloured, or white tinged with pink, is now placed in a new genus called *Petrocallis*.

1.—DRABA BRACHYSTEMON, *Dec.* THE SHORT-STAMINED WHITLOW GRASS.

**SYNONYMS.**—*D. aizoides*, *Curt.*; *D. ciliaris*, *Lin.*; *Sedum alpinum*, *Bauh.*; *Leucojum luteum*, *Col.*; Sea-green Draba

**SPECIFIC CHARACTER.**—Scape naked, smooth. Leaves elongated, linear, keeled, ciliated. Stamens hardly equal in length to the calyx.

**ENGRAVINGS.**—Bot. Mag. t. 170; and our fig. 11, in Plate 18.

(*G. Don.*)

**DESCRIPTION, &c.**—This pretty little plant never looks well but in a tuft, and then it has a very good effect on rock-work. It is a native of the German Alps, whence it was introduced before 1759. It begins to flower in March, and continues in blossom about six weeks.

## GENUS IX.

HUTCHINSIA, *B. Br.* THE HUTCHINSIA.*Lin. Syst.* TETRADYNAMEA SILICULOSA.

**GENERIC CHARACTER.**—Silicle elliptical, with navicular wingless valves. Cells 2-seeded, or many-seeded. Calyx equal at the base. Petals equal. (*G. Don.*)

**DESCRIPTION, &c.**—There are numerous species; all of which are dwarf plants, only suited for rock-work, or growing in small pots on an alpine shelf. The soil should be a mixture of loam, sand, and peat; and the plants may be increased by dividing the roots, by seeds which they ripen in great abundance, or by cuttings.

1.—HUTCHINSIA STYLOSA, *Dec.* THE LONG-STYLED HUTCHINSIA.

**SYNONYMS.**—*Iberis stylosa*, *Ten.*; *Thlapsi minimum*, *Ard.*

**ENGRAVINGS.**—Bot. Mag. t. 2772; and our fig. 8, in Plate 17.

**SPECIFIC CHARACTER.**—Leaves somewhat fleshy, lower ones stalked,

obovate-oblong, almost entire, caulin ones oblong; stamens, petals, and style about the length of the pod. (*G. Don.*)

**DESCRIPTION, &c.**—This pretty little plant does not grow above two or three inches high, but it throws up several flower-stems, each bearing clusters of flowers, from each root. A native of Naples, found on rocks. Introduced in 1821.

GENUS X.  
IBERIS, *Lin.* THE CANDY TUFT.

*Lin. Syst.* TETRADYDAMIA SILICULOSA.

**GENERIC CHARACTER.**—Petals 4, two outer ones longest. Silicle much compressed, truncately emarginate. Seeds ovate, pendulous. (*G. Don*)

**DESCRIPTION, &c.**—The annual and perennial species of Candy Tuft bear so strong a likeness to each other as to be easily recognised at a glance. Some of the perennial species are half shrubby. The flowers are produced in large corymbose racemes, which in several of the species are elongated, and take somewhat of a spike-like character. This is the case, especially, with one of the annual species; but the flowers of the perennial species are generally corymbose. The name of Iberis is derived from Iberia, the ancient name for Spain, because some of the species are natives of that country.

1.—IBERIS TENOREANA, *Dec.* PROFESSOR TENORE'S CANDY TUFT.

**SYNONYM.**—*I. cepaea folia*, *Tenor.*

**SPECIFIC CHARACTER.**—Stems suffrutescent at the base; leaves

**ENGRAVINGS.**—Swt. Brit. Flw. Guid. t. 88; Bot. Mag. t. 2783, and our fig. 6 in Plate 18.

**DESCRIPTION, &c.**—This species, which is a native of Naples, introduced in 1822, is very valuable, from the great length of time it continues in flower. Its flowers also are very handsome, as the bright red calyxes of those which are unopened give a beautiful tinge of pink to those which are fully expanded; and they all become pink as they die off. It is quite hardy in any common garden soil, and it is generally propagated by cuttings.

2.—IBERIS SAXATILIS, *Lin.* THE ROCK CANDY TUFT.

**SYNONYM.**—*I. Gollieriana*, *Scop.*; *I. s. β. contorta*, *Sims.*, *I. contorta*, *Sweet.*

**SPECIFIC CHARACTER.**—Frutescent. Leaves linear, entire, fleshy. Flowers corymbose

**ENGRAVING.**—Bot. Mag. t. 1642, and our fig. 7 in Plate 18.

**DESCRIPTION, &c.**—This pretty little plant is a native of the mountains of the south of Europe, where it is generally found growing on limestone rocks. It is quite hardy, but it requires a calcareous or sandy soil. It flowers in spring, and is propagated by seeds, which it ripens freely. The plant figured in Plate 18 is a variety, differing principally in the leaves, which in the species are pointed and hairy, while in the variety they are smooth and blunt.

3.—IBERIS CILIATA, *All.* THE FRINGED CANDY TUFT.

**SPECIFIC CHARACTER.**—Herbaceous, smoothish leaves linear, entire, ciliated at the base, pods corymbose, emarginate; lobules blunt, equal in length with the style. (*G. Don*)

**DESCRIPTION, &c.**—A very pretty little plant, most suitable for rock-work, which flowers in May or June. It is a native of Caucasus, and was introduced in 1759. It is propagated by seeds, and is quite hardy.

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OTHER SPECIES OF IBERIS.

There are several other species, but with a few exceptions they differ so little in flowers and treatment as scarcely to be worth cultivating. The principal exception is *I. carnosa*, a pretty little plant, very nearly allied to *I. Tenoreana*.

## GENUS XI.

## MALCOMIA, R. Br. THE MALCOMIA.

*Lin. Syst. TETRADYNAZIA SILIQUOSA.***GENERIC CHARACTER.**—Siliques roundish. Stigmas simple, much pointed. (*G. Don.*)

**DESCRIPTION, &c.**—This genus is best known by the little annual plant generally called Virginia Stock. The name of the genus was given to it by Mr. Robert Brown, in honour of the late Mr. Malcolm, a nurseryman at Kensington.

## I.—MALCOMIA LITTOREA, R. Br. THE SEA-SIDE MALCOMIA.

**SYNONYMES.**—*Cheiranthus littoreus*, *Lin.*; *Hesperis littorea*, *Lam.*.**ENGRAVINGS.**—Swt. Brit. Flwr. Gard. t. 54; and our fig. 4, in *Plato* 18.**SPECIFIC CHARACTER.**—Stems many, erect; leaves lanceolate-linear, almost entire, hoary with short down. Pedicels the length of the calyx. Pods hoary. (*G. Don.*)

**DESCRIPTION, &c.**—A biennial plant which sends up several stems from the same root, and grows about a foot high. It is a native of the south of Europe, growing in the sandy shores of the Mediterranean. It is quite hardy in British gardens, and it will grow in any common soil. It is propagated by seeds. It was introduced before 1683.

## OTHER SPECIES OF MALCOMIA.

*M. ALYSOIDES, Dec.; HESPERIS ALYSOIDES, Pers.*

A dwarf plant, a native of Portugal, not yet introduced.

*M. PATULA, Dec.; II. ARENARIA, Lag.*

This plant is a native of sandy places near Madrid. It is not above six inches high; and if introduced, it would make a pretty plant for rock-work, as it has large purple flowers, and greyish downy leaves.

## GENUS XII.

HESPERIS, *Lin.* THE ROCKET.*Lin. Syst. TETRADYNAZIA SILIQUOSA.***GENERIC CHARACTER.**—Siliques roundish, or somewhat four-sided. Stigmas two, erect, connivent. Calyx bisaccate at the base. Seeds oblong, somewhat triquetrous. Stamens all toothless. (*G. Don.*)

**DESCRIPTION, &c.**—This genus takes its name from the plants included in it being most fragrant in the evening; many of them, indeed, having no fragrance during the day. The species are generally biennial; but some are perennial, and some annual: and they have all fibrous roots. They are all hardy, and of easy culture in any common garden soil. They are also all natives of Europe, or the north of Africa.









1.—*HESPERIS MATRONALIS*, *Lin.* THE COMMON ROCKET, OR DAMES' VIOLET.

**VARIETIES.**—There are three forms of this species: one, *H. m. hortensis*, which is a native of various parts of Europe, but most common in Germany, and was introduced before 1597, has sweet-scented flowers, and ovate-lanceolate leaves; the second, *H. m. sylvestris*, which is a native of Britain, and which is figured in Plate 18, has scentless flowers, and cordate leaves; and the third, *H. m. Siberica*, which is a native of Siberia, introduced in 1800, has

narrow sharply-pointed leaves—the latter is also found wild in various parts of the north of Europe.

**ENGRAVINGS.**—Eng. Bot. t. 731; 2d. edit. t. 949.

**SPECIFIC CHARACTER.**—Pedicels length of calyx; petals obovate; pods erect, torose, smooth, not thickened at the edge; leaves ovate-lanceolate, smooth. (*G. Don.*)

**DESCRIPTION, &c.**—This plant has long been a favourite garden flower; and the German ladies are said to be so fond of it in pots, that it has acquired the name of Dames' Violet. Parkinson calls it the Queen's Gilliflower, and Gerard Damask Violets. Besides the regular varieties enumerated, many sub-varieties are grown in gardens, such as the double purple Rocket, and the double white; but the most remarkable of these is the double green, a kind now rarely seen in gardens. All the kinds of Rocket are quite hardy, but they will not flower well unless they are grown in very rich soil, though not in soil enriched by recent manure. Experienced gardeners consider the trenches in which celery has been grown the previous year, as the best soil for the garden Rocket; as celery is a vegetable which requires a great deal of manure to make it fine, and the manner in which the ground is thrown up to make the trenches, thoroughly pulverizes the soil. The plants are either raised from seed, or propagated by dividing the roots. When grown to the greatest perfection they are transplanted every year, or every second year, after they have done flowering, into fresh soil of the nature already mentioned; care being taken to form a pit to receive this soil a foot or eighteen inches deep. Where the soil from celery trenches cannot be procured, vegetable mould, mixed with part of an old hotbed, may be used; but it is essential that the soil should be rich, light, and friable. If thus treated, the double white and double purple varieties will have noble flowers, and will form a magnificent ornament to the flower-garden.

2.—*HESPERIS GRANDIFLORA*, *Sims.* THE LARGE-FLOWERED GARDEN ROCKET.

**ENGRAVINGS.**—Bot. Mag. t. 2683; and our fig. 1, in Plate 18.

obovate; racemes many-flowered, crowded; radical leaves oblong-

**SPECIFIC CHARACTER.**—Pedicels longer than the calyx; petals

ovate, obtuse; caudine ones lanceolate, sessile. (*G. Don.*)

**DESCRIPTION, &c.**—This is a very showy species, growing to the height of three feet or more in rich soils and favourable situations. It requires the same treatment as *H. matronalis*, and if a double variety could be obtained, it would be a most splendid border flower. Neither the native country nor year of introduction is known, but it has been cultivated in British gardens since 1817; and as it appears quite hardy, it is probably a native of the north of Europe.

3.—*HESPERIS SPECIOSA*, *Sweet.* THE SHOWY ROCKET.

**ENGRAVINGS.**—Sweet's Brit. Flav. Gard. 2d ser. t. 135; and our fig. 2, in Plate 18.

clothed with stellate tufts of hairs. Leaves sessile, lower ones spatulate, and tapering at the base; upper ones oblong-ovate, acuminate. Pedicels much shorter than the calyx. Siliques tetragonal, very hairy. Stigma capitate, indented at the apex.

**SPECIFIC CHARACTER.**—Stem suffrutescent at the base; branching; branches short, and clothed at the base with numerous, rigid, taper-pointed scales; and with the leaves, scape, and peduncles thickly

**DESCRIPTION, &c.**—A beautiful little plant with rose-coloured flowers, which are first produced in a corymb, but afterwards elongate into a raceme. It was raised in 1827 from Siberian seeds by Mr. Cameron at Bury Hill; but as it did not flower till the third year, and as it has never produced seeds in this country, it is propagated by dividing the root.

4.—*HESPERIS FRAGRANS*, *Fisch.* THE FRAGRANT ROCKET.

**ENGRAVINGS.**—Swt. Brit. Flow. Gard. t. 61; and our *fig. 3*, in Plate 18.

**SPECIFIC CHARACTER.**—Pedicels villous, much shorter than the very

villous calyx; petals oblong, wavy, lower leaves stalked, lanceolate, runcinate, blunish, upper leaves almost sessile, ovate, acuminated, coarsely toothed at the base. (*G. Don.*)

**DESCRIPTION, &c.**—This species is a biennial, with flowers that are only fragrant at night. The petals have each a long narrow limb, and they are set on so loosely as to hang widely apart; which, combined with their pale and dingy colour, gives them a faded appearance even when newly blown. The leaves are runcinate, and the lower ones are furnished with petioles. The pods are two-edged, with a spongy mass inside, differing in this respect as well as in the flowers from the species previously described, all of which have petals with an obovate limb, forming a compact flower; and their seed-pods roundish or somewhat four-cornered, with a membranous dissepiment. The species is a biennial, a native of Siberia, introduced in 1821, and it seldom grows above six or eight inches high.

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OTHER SPECIES OF *HESPERIS*.*H. TRISTIS*, *Linn.*; *Bot. Mag.* t. 730; *CHEIRANTHUS LANCEOLATUS*, *Willd.*

This species is nearly allied to *H. fragrans*, and only smells at night. The flowers are of a dirty white, or dingy purple. It is a biennial, a native of Austria, &c., and was introduced before 1629.

*H. RUNCINATA*, *Waldst. et Rit.*

This is a biennial, nearly allied to *H. matronalis*, but covered with short clammy hairs. It is a native of Hungary, and was introduced in 1804. There are many other species, but they are rarely seen in British gardens.

## GENUS XIII.

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*ERYSIMUM*, *Gaertn.* TREACLE MUSTARD.*Linn. Syst.* TETRADYNAMEA SILIQUOSA.

**GENERIC CHARACTER.**—Siliques 4-sided. Calyx closed. Cotyledons flat, oblong. (*G. Don.*)

**DESCRIPTION, &c.**—There are many species of *Erysimum*, but only two or three that can be called ornamental. Of these, by far the most beautiful is *E. Petroskianum*, which, though it may be treated as an annual, is found to last two or three years when protected during winter, and may be propagated by cuttings. The other species are mostly biennial; and in all, the flowers are yellow or orange. The name of *Erysimum* is from *eryo*, to draw, the plants having been formerly used to draw blisters in medicine.

1.—*ERYSIMUM IBERICUM*, *Dec.* THE ARMENIAN HEDGE MUSTARD.

**SYNONYMS.**—*Cheiranthus Armeniacus*, *Sims*; *Armenian Wall-flower*.

**ENGRAVING.**—*Bot. Mag.* t. 835; and our *fig. 9*, in Plate 18.

**SPECIFIC CHARACTER.**—Lower leaves runcinate, toothed, upper ones lanceolate, undivided; floriferous branches and pods compressed, 4-sided, erectly spreading. (*G. Don.*)

**DESCRIPTION, &c.**—A showy flower, resembling a yellow Brompton stock, if such a plant can be imagined. The flowers, which are sweet-scented, appear in May; and the species, which is a native of Mount Ararat, was introduced in 1803. It will grow in any common garden soil, and it is quite hardy.

**2.—ERYSIMUM LANCEOLATUM, R. Br. THE LANCEOLATE-LEAVED TREACLE, OR HEDGE MUSTARD.**

**SYNONYMES.**—*E. diffusum*, *Bot. Reg.*; *E. alpinum*, *Pers.*; *Cheiranthus erysimoides*, *Lin.*; *C. alpinus*, *Smith*; *C. decumbens*, *Schlech.*

**ENGRAVINGS.**—*Bot. Mag.* t. 2423; *Bot. Reg.* t. 388.

**SPECIFIC CHARACTER.**—Leaves lanceolate, toothed, upper ones almost linear, entire; petals orbicularly-obovate; claws of petals longer than the calyx; pods erect; stigma almost sessile.

**DESCRIPTION, &c.**—The variety of this species, *E. C. alpinum*, is one of the prettiest plants that can be imagined, from the great profusion and rich golden hue of the flowers. It is quite a dwarf plant, seldom growing more than six inches high, and flowering in May and June. It is a native of the greater part of the Continent, and was introduced before 1597.

**OTHER SPECIES OF ERYSIMUM.**

Among the handsomest of these may be mentioned *E. versicolor*, a native of Persia, the flowers of which are white, cream-coloured, brimstone, and golden yellow; *E. cuspidatum*, the plants of which have a greyish hue, though the flowers are of a bright golden yellow; *E. suffruticosum*, with small pale yellow corymbose flowers; and *E. Redowskii*, with large pale yellow flowers. *E. Petroskianum* (already mentioned in my work on Annuals) is decidedly a most valuable plant, from its great hardiness, and from its producing its bright orange flowers at a very early season, and continuing them all the summer.

**GENUS XIV.**

**AETHIONEMA, R. Br. THE AETHIONEMA.**

*Linn. Syst. TETRADYNAMEA SILICULOSA.*

**GENERIC CHARACTER.**—Silicles oval, usually emarginate, with navicular valves, which are winged on the back. Cells 1—2-seeded. Larger stamens connected, or each furnished with a tooth on the

inside. Seeds ovate-oblong, appearing mottled under a microscope. (*G. Don.*)

**DESCRIPTION, &c.**—The name of this genus is derived from *aitho*, to scorch, and *nema*, a filament, in allusion to the burnt appearance of the filaments. There are three or four perennial species, but as they are all quite dwarf plants, with very small flowers, it will probably be sufficient to describe one species. They are all quite hardy, but from their diminutive size they are only suitable for rock-work.

**1.—AETHIONEMA MEMBRANACEUM, Dec. THE WINGED AETHIONEMA.**

**SYNONYMES.**—*Lepia membranacea*, *Desv.*; Membraneous-winged *Aethionema*.

**ENGRAVINGS.**—*Swt. Brit. Flow. Gard.* 2nd ser. t. 69; and our *fig.* 10, in Plate 18.

**SPECIFIC CHARACTER.**—Pods 2-celled, 2-seeded, obcordate, crowded, valves winged on the back, entire; leaves linear, crowded, lower ones spreading. (*G. Don.*)

**DESCRIPTION, &c.**—The stem of this little plant is frutescent at the base, and dividing above into numerous spreading branches. The flowers are very small, but they are pretty, and produced in great abundance. The species is a native of Persia, whence it was introduced in 1820. In this country it is generally grown on rock-work, in light sandy soil.

## GENUS XV.

## MORICANDIA, Dec. THE MORICANDIA.

*Lin. Syst.* TETRADYNAZIA SILIQUOSA.**GENERIC CHARACTER**—Siliques tetragonal, somewhat 2 edged. Seeds disposed in two rows in each cell; ovate, small, and a little margined.**DESCRIPTION, &c.**—This genus is named in honour of Signor Moricand, an Italian botanist. There is only one species which is a biennial, the others being annuals.

## 1.—MORICANDIA ARVENTIS, Dec. THE FIELD MORICANDIA.

**SYNONYMS.**—*Brassica arvensis*, *Lin.*; *B. purpurea*, *Mill.* *B. perfoliata*, var. *B*, *Lam.*; *Turritis arvensis*, *R. Br.*; *Ciantha frutescens*

**ENGRAVINGS.**—Swt. Brit. Flow. Gard. t. 278; and our fig. 5, in Plate 18.

**SPECIFIC CHARACTER.**—Pods somewhat tetragonal; caudate leaves cordate, stem-clasping, quite entire. (*G. Don.*)

**DESCRIPTION, &c.**—This species, though called a biennial, will frequently last three or four years. The racemes of flowers are very loose, and the leaves, which are glaucous, and have no footstalks, sheath the stem at the base. The plant is a native of the south of Europe, and it was introduced in 1739, though it is very seldom seen in gardens, probably from its being frequently killed in severe winters. It should be planted in a warm open border, in a rich deep soil, and protected by turning a flower-pot over it in winter. It is propagated by seeds, which it ripens abundantly, and which should be sown in February or March.

## GENUS XVI.

## MORISIA, Gay. THE GROUND CRESS.

*Lin. Syst.* TETRADYNAZIA SILIQUOSA.**GENERIC CHARACTER.**—Siliques short, two jointed joints two-celled, crustaceous, globose, wrinkled, upper one bearing the persistent style, 1-seeded; lower one larger, 3-seeded.**DESCRIPTION, &c.**—There is only one species, which was formerly included in the genus *Erucaria*. The present genus is named in honour of Professor Moris, who discovered the only plants of it yet known on the mountains of Sardinia.

## 1.—MORISIA HYPOGAEA, D. Don. THE UNDER-GROUND MORISIA.

**ENGRAVINGS.**—Swt. Brit. Flow. Gard. 2nd ser. t. 290, and our fig. 8, in Plate 18.

**SPECIFIC CHARACTER.**—Leaves pinnate, leaflets sessile, triangularly falcate, scape naked, 1-flowered.

**DESCRIPTION, &c.**—A beautiful little plant, growing in a compact tuft close to the ground, with golden yellow flowers, in the shape of a Maltese cross. The leaves, which are very numerous, resemble those of the dandelion, and are of a deep glossy green. The whole plant is admirably adapted for rock-work, a little nest being made for it between the stones of light loamy soil, sufficiently deep to give room for its root, which is long and fusiform. The species is propagated by seeds, which should be sown as soon as ripe; the specific name of the plant, indeed, indicates this peculiarity, as the flower-stalk coils up as soon as the seeds are ripe, like those of the cyclamen, and buries the capsule in the ground, where it discharges its seeds. The plant is a native of Sardinia, and it was introduced in 1834.

## GENUS XVII.

MATHIOLA, *R. Br.* THE STOCK.*Lin. Syst. TETRADYNAZIA SILIQUOSA.*

**GENERIC CHARACTER.**—Siliques roundish. Stigmas connivent, thickened or horned at the back. Calyx bisaccate at the base. Seeds compressed, disposed in one series, numerous. (*G. Don.*)

**DESCRIPTION, &c.**—The Stocks are so well known as to need little description; but it perhaps is not generally known that the leaves of all the species are eatable boiled or in salad. The botanic name of *Mathiola* was given in honour of Dr. *Mathioli*, an Italian physician, who died in 1577. There are several species, but the most interesting are the annual or Ten-week Stock (*M. annua*), and the Queen or Brompton Stock (*M. incana*), which, though called a biennial, is rather a suffrutescent perennial, as it will last several years. Besides these there are several shrubby greenhouse species, well deserving of cultivation.

1.—MATHIOLA INCANA, *R. Br.* THE QUEEN OR BROMPTON STOCK.

**SYNONYMS.**—*Cheiranthus incanus*, *R. Br.*; *Mathiola simplicicaulis*, *Stet.*

**ENGRAVINGS**—Eng. Bot. t. 1935; 2nd edit. t. 947; and our figs. 1 and 2 in Plate 19.

**SPECIFIC CHARACTER.**—Stem suffruticose at the base, erect, simple or branched. Leaves lanceolate, quite entire, hoary, siliques somewhat cylindrical, without glands. (*G. Don.*)

**DESCRIPTION, &c.**—Few flowers are more improved by cultivation than this stock; which some florists divide into two kinds—viz.: those with a single stem which are rarely above two feet high, and which are called the Brompton Stock; and those with branched stems, which are sometimes five or six feet high, and which are called Queen Stocks. Both are called biennials, but the Queen Stocks will sometimes last several years. Both kinds grow best in chalky or sandy soils; the largest I have ever seen being at Greenhithe in Kent, in chalk, and at Shenstone near Lichfield, in sand.

The best mode of propagation is by seeds, which should always be chosen from semi-double flowers; or from such single flowers as have grown near double ones. Double flowers themselves, rarely produce any seeds; as when they become double, the stamens and pistil are changed into petals; but sometimes a stamen or two remain unchanged, the pollen from which may reach the single flowers near it, and the seedlings from plants thus situated will always be finer than any others. The seeds should be sown in April or May, in sandy soil, and somewhat shady situation, as they will become weak and yellow if exposed too much to the sun. The seeds should be sown as thinly as possible, either in circles or drills (the latter being at least six inches apart), and covered with earth, but not deeply, all that is required being to exclude the light. If the weather should be hot and dry, the plants may be watered at night, or in the morning; but never in the middle of the day, unless care be taken not to wet the leaves. When the leaves are watered in the sun, they become discoloured and shrivelled, and consequently unfit to elaborate the sap; and, unless the sap be properly elaborated, it cannot afford the nourishment necessary for the growth of the young plant. When the young plants are two or three inches high, they should be thinned out, leaving the plants in the rows about six inches apart; and a month or six weeks afterwards, every other row should be removed, and every other plant in the rows that are left. The plants left will then be twelve inches apart every way, which is a good distance for them to flower. The plants removed

should be taken up with a ball of earth to each, and then planted nine inches or a foot apart every way, in light rich soil; care being taken to shade them and water them well, till they are settled in their new situation, and begin to grow. The transplanted stocks, however, are never so fine as those left to pass the winter in the seed-bed. When the cold weather sets in, the beds should be covered with half hoops and mats, or hand glasses, or flower-pots put over the plants; as though they will live through the winter without any protection, they amply repay, by their increased beauty, any care taken of them at that season. In March, if the weather be open, the coverings may be removed; and the plants may be either again transplanted, or suffered to flower in the bed.

The Brompton Stock is a native of England, and several parts of Europe; and the species was formerly known under the names of the Stock Gilliflower, and the Queen's Gilliflower—the latter word being supposed to be a corruption of July-flower, or Jolie-fleur. In the middle counties of England the wallflower is always called the gilliflower. The name of wallflower alludes to its growing wild on walls.

## 2.—MATHIOLA SINUATA, *R. Br.* THE GREAT SEA-STOCK.

**SYNONYMS.**—*Cheiranthus sinuatus*, *Lin.*; *C. tricuspidatus*, *Huds.*;

*C. muricatus*, *Lam.*; *Hesperis sinuata*, *Lam.*

**ENGRAVINGS.**—Eng. Bot. t. 462, 2nd edit. t. 948, and our fig. 3 in Plate 19

**SPECIFIC CHARACTER.**—Stem somewhat erect, herbaceous, branched, leaves oblong, downy, lower ones sinuated; siliques compressed, velvety, and muricated with glands. (*G. Don.*)

**DESCRIPTION, &c.**—This species is known by its deeply-notched leaves, and flowers of a dingy pink, which become sweet-scented in the evening. It is found on the sandy sea-shore of Cornwall and Wales, and various parts of Europe; and the whole plant has a bitter, alkaline taste. This species is of easy culture in any deep sandy soil; it flowers in August, and grows about two feet high.

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## OTHER SPECIES OF MATHIOLA.

### M TARTARICA, *Dec.*

Flowers of a livid purplish yellow; a native of the south of Tartary, on rocks: introduced in 1826. This grows from one to three feet high; the leaves are grey with soft down; and the root is fusiform and fleshy.

### M. CORONOPIFOLIA, *Dec.*

A native of Sicily, introduced in 1818; with dingy livid flowers, and hoary, pinnatifid leaves.

## GENUS XVIII.

### CHEIRANTHUS, *Lin.* THE WALL-FLOWER.

#### *Lin. Syst.* TETRADYNAMIA SILIQUOSA.

**GENERIC CHARACTER.**—Siliques terete, or compressed. Stigmas two-lobed, or capitate. Cilix bisarcate at the base. Seeds in one series, ovate, compressed.

**DESCRIPTION, &c.**—This genus, which takes its name from two Greek words, signifying hand-flower, was formerly much more extensive than it now is, as Linnaeus included it in the Stocks, and several allied genera. The species now left in the genus are mostly greenhouse shrubs. All the species require rich and yet light soil, and they are all abundant flowerers.









1.—CHEIRANTHUS CHEIRI, *Lin.* THE COMMON WALL-FLOWER.

**SYNONYME.**—*C. fruticosus*, *Lin*

**ENGRAVINGS.**—Eng. Bot. t. 1934; and our figs. 4 and 5 in Plate 19.  
**SPECIFIC CHARACTFR.**—Leaves lanceolate, quite entire, covered with

two-parted, adpressed hairs, or smooth; siliques linear; lobes of stigma recurved.

**DESCRIPTION, &c.**—Few plants are greater favourites than the common Wall-flower, and none give greater cheerfulness to a garden; not only in spring and summer, when the plants are in flower, but in winter, when the evergreen leaves of the plants take away the bare and naked appearance of empty flower-beds. The flowers vary from pale yellow to a rich dark purple, and an equally rich deep crimson or blood-colour; and they are double, semi-double, or single. There is a kind called the French Wall-flower, which has purple flowers; and another called Harlequin, with rich dark purple flowers, and the leaves edged with pale yellow, which I saw in the spring of 1842 in Norman's nursery at Brighton. The Russian and German wall-flowers, like their annual stocks, are very much admired, and seed of them is sent every year to England. All the kinds are usually propagated by seed, which is ripened freely, and which may be sown either in spring or autumn for flowering the next year. When the young plants appear, they should be thinned, transplanted, and otherwise treated like young stocks, and they will flower splendidly. Some botanists divide the wall-flowers into two species, viz., those which are quite herbaceous, with an elongated raceme of deep yellow or reddish flowers, which they call *C. Cheiri*, and those which are shrubby at the base, with yellow, corymbose flowers, which they call *C. fruticosus*. Choice kinds may be propagated by cuttings, which root readily in sand.

## OTHER SPECIES OF CHEIRANTHUS.

*C. ALPINUS, Lin.*

A beautiful plant, with clusters of yellow, sweet-scented flowers, generally grown in pots, or on rockwork. It flowers from April till July. It is a native of Lapland and Norway, whence it was introduced in 1820.

*C. OCHROLEUCUS. Hall*

A native of the Alps of Switzerland, among rocks and stones; introduced in 1819. The flowers are pale yellow, and the plant is procumbent.

## CHAPTER VIII.

## VIOLACEÆ.

**CHARACTER OF THE ORDER.**—Sepals 5, equal, or unequal. Corolla spurred, of 5 petals, regular or irregular. Stamens 5, perigynous. Filaments drawn out each into a scale beyond the anther; two of the

filaments in the irregular flowers are furnished with an appendage each, which is drawn within the spur. Capsule one-celled, three-valved, many-sided. Placentas three, parietal.

**DESCRIPTION, &c.**—The only hardy plants in this order are those contained in the genus *Viola*.

## GENUS I.

VIOLA, *Tourn.* THE VIOLET.*Lin. Syst.* PENTANDRIA MONOGYNIA.

**GENERIC CHARACTER.**—Calyx with unequal sepals, all drawn out at the base into ear-like appendages. Lower petal drawn out at the base into a hollow spur. Stamens approximate, the two anterior

anthers furnished with long awl-like appendages. Capsules trigonal. Valves opening with elasticity. (*G. Don.*)

**DESCRIPTION, &c.**—Though two species belonging to this order (namely the Violet and the Heartsease) are well known, the numerous others included in it are seldom seen, and still more rarely cultivated in private gardens. The name of Viola is said to be derived from Io, who, when transformed into a cow, is fabled to have eaten violets as the first food she took.

1.—VIOLA PEDATA, *Lin.* THE CUT-LEAVED VIOLET.

**ENGRAVINGS.**—Bot. Mag. t. 89; Swt. Brit. Flow. Gard. t. 69; And. Bot. Rep. t. 153.

**SPECIFIC CHARACTER.**—Stigma large, compressed at the sides, obliquely truncate at the top, and perforated with a very short beak.

Leaves full of pellucid dots, pedately many-parted; segments linear-lanceolate, variously lobed; stipules pectinately jagged, adhering a considerable way. Petals all smooth, superior one truncate. Sepals lanceolate, acute, ciliated, emarginate behind. (*G. Don.*)

**DESCRIPTION, &c.**—This species is a native of Virginia, from which country it was introduced about 1759. It has deeply-cut leaves, which are divided so as to look somewhat like those of the heartsease; and the flowers are blue, with a white centre. This species must be grown in very sandy loam, and it is propagated by dividing the roots, as it seldom ripens seeds in this country. In very severe weather it requires a little shelter; and, indeed, it will always flower best if sheltered a little during winter.

*V. septentloba*, *V. pedatifida*, and *V. digitata*, all natives of North America, are nearly allied to this species.

2.—VIOLA FLABELLIFOLIA, *Lodd.* FAN-LEAVED VIOLET.

**SYNONYMES.**—*V. pedata*, var. *bicolor*, *Pursh.*; *V. atropurpurea*, *Ruf.*; *V. pedata*, var. *flabellata*, *D. Don.*

**ENGRAVINGS.**—Swt. Brit. Flow. Gard., 2d ser. t. 217; Lodd. Bot. Cab. t. 777; and our fig. 1 in Plate 20.

**SPECIFIC CHARACTER.**—Style pubescent, stigma as in *V. pedata*. Leaves pedately 5—7-parted; partitions cuneated, cut; stipules jagged, adhering a considerable way, petals smooth. (*G. Don.*)

**DESCRIPTION, &c.**—This species is extremely beautiful, from the rich velvety appearance of the upper petal, which is much darker than the others. The leaves are cut into narrow lobes, like the sticks of a fan; they have numerous minute dots, and are of a fleshy substance. The plant grows about six inches high, and the root has a large fleshy crown. It is a native of the southern provinces of North America, whence it was introduced about 1820. It is quite hardy, and should be grown in loam and bog earth. It is propagated by dividing or rather taking the offsets from the root.

3.—VIOLA PALMATA, *Lin.* THE PALMATE-LEAVED VIOLET.

**ENGRAVINGS.**—Bot. Mag. t. 535; and our fig. 4 in Plate 21.

**SPECIFIC CHARACTER.**—Nearly smooth, or sometimes a little pubescent; stigma capitate, recurved, beaked, depressed, marginate; rhizoma

fleshy, thick; leaves hastately cordate, palmately lobed; lobes polymorphous (rarely undivided); sepals ciliated, ovate-lanceolate, entire behind; lateral petals bearded, with the claws of all heeled. (*G. Don.*)

**DESCRIPTION, &c.**—There are many varieties of this species, some of which have fragrant flowers, and others flowers variegated with blue and white. The flowers of the species are blue, and the leaves are large and

palmate, that is, shaped like the hand. The species is a native of Virginia, whence it was introduced before 1739, as it is named in a list of plants cultivated in that year by Philip Miller, author of the celebrated *Miller's Dictionary*, in the Chelsea Botanic Garden, of which he was then curator. The species is quite hardy in British gardens, and it is propagated by dividing the root. There is a variety in the Handsworth Nursery, near Birmingham, called *V. striata*.

#### 4.—VIOLA CUCULLATA, *Pursh.* THE HOODED, OR HOLLOW-LEAVED VIOLET.

**SYNONYMES.**—*V. cordata*, *Walt.*; *V. obliqua*, *Pio.*; *V. cucullata*, var., *glaberrima*, *Dec.*

**ENGRAVINGS.**—*Bot. Mag.* t. 1795; *Swt. Brit. Flow. Gard.* 2nd ser. t. 298; and our fig. 4 in Plate 20.

**SPECIFIC CHARACTER.**—*Stigma triangular, marginated; rhizoma*

*thick, fleshy; leaves smooth, cordate, acute, serrated, cucullate at the base; peduncles longer than the petioles; limb of the lower petal narrow, beardless, with the two lateral ones bearded, all obliquely twisted; claws of all keeled.* (*G. Don.*)

**DESCRIPTION, &c.**—This violet has the leaves folded, or with the margins turned up, so as to resemble a kind of cup. The flowers are large, and the petals are nearly equal in size. There are several allied species, such as *V. sororia*, or *affinis*, and *V. papilionacea*, which are probably only varieties of this plant. It is a native of North America, always growing in wet clayey soils. It was introduced in 1762, and is quite hardy in British gardens. It is propagated by dividing the root, or seeds, but it has been observed that the flowers which ripen seeds have no petals.

#### 5.—VIOLA LANCEOLATA, *Lin.* THE LANCE-LEAVED VIOLET.

**ENGRAVINGS.**—*Lodd. Bot. Cab.* t. 211; and *Swt. Brit. Flow. Gard.* t. 174.

**SPECIFIC CHARACTER.**—*Stoloniferous; stigma marginate, beaked.*

*Leaves lanceolate, tapering to both ends. Sepals lanceolate. Two lateral petals bearded.* (*G. Don.*)

**DESCRIPTION, &c.**—A very singular little plant, with long lance-like leaves, standing erect. The leaves taper towards both ends, and they are serrated on the margin. The flowers are white, with the lower petals beautifully pencilled with dark lines; but they have no fragrance. The species is a native of North America, where it is generally found in overflowed meadows or other humid places. It was introduced in 1759, and should be grown in British gardens in peat. *V. primulifolia*, introduced in 1783, and *V. attenuata*, introduced in 1759, are probably only varieties of this species. The latter has the upper petals streaked with dark purple veins, instead of the lower ones.

#### 6.—VIOLA SUAVIS, *Bieb.* THE FRAGRANT VIOLET.

**ENGRAVING.**—*Swt. Brit. Flow. Gard.* 2nd ser. t. 126.

**SPECIFIC CHARACTER.**—*Stigma hooked, naked; leaves reniform, cordate, crenate, pubescent; sepals obtuse. Four upper petals narrow-*

*est, lower one emarginate; two lateral ones with a hairy line. Stolons long, creeping, and rooting.* (*G. Don.*)

**DESCRIPTION, &c.**—A valuable species, distinguished from the common sweet violet by its pale green leaves, and its longer and paler flowers; the lower petal being much larger and broader than the others, and more decidedly notched in the centre. The species is a native of Tartary, and it is quite hardy in British gardens, where it is propagated by seeds, or division of the root. It was introduced in 1823.

7.—*VIOLA ODORATA*, Lin. THE COMMON SWEET VIOLET.

ENGRAVING.—Eng. Bot. t. 894.

SPECIFIC CHARACTER.—Stigma hooked, naked; leaves roundish-cordate, crenate, smoothish; sepals ovate, obtuse; two lateral petals with a hairy line; spur very blunt; capsules turgid, hairy; seeds turbinate, whitish; stolons long, creeping, and rooting. (G. Don.)

DESCRIPTION, &c.—The delightful fragrance of this species makes it a favourite flower in every garden. It is a native of Great Britain, indeed of the whole of Europe and part of Asia, extending, it is said, to China and Japan. There is no doubt that this species is the violet of the ancients, as it is described exactly by Dioscorides, who recommends it for its medicinal virtues, as well as for its beauty and fragrance. There are numerous varieties of this species, eight of which are distinct. Of these some are white, some purple, and some blue; and some of all these kinds are double. The most interesting and the most generally cultivated are, however, the Neapolitan and Russian violets. The Neapolitan violets are of a very pale blue, and very fragrant; but their chief advantage is that they may easily be made to flower all the winter. For this purpose some excellent directions are given in Paxton's Magazine of Botany, vol. 3, for the culture of these plants, of which the following is an abridgment. "In the first place, cuttings are taken off the plants as soon as they have done flowering in May, and these cuttings are planted in light soil in the border of a south wall, or in any other warm, sheltered situation. A hand-glass is then put over them till they have taken root, and as soon as they begin to grow they are removed to another bed of light soil, where they are planted about nine inches apart. They should be watered in dry weather, and the ground stirred with a hoe. In August a bed is prepared, by digging a pit, of a size suitable to the frame which is to cover them, about eighteen inches deep. In the bottom of this is placed a layer of broken pots, brickbats, and other rubbish, about nine inches thick; and upon this a layer of compost about a foot thick, of the following ingredients:—two barrow-loads of leaf mould, one of free loam, one of well-rotted manure, and half a barrow of clear sand. These must be thoroughly mixed by frequent turnings, and if mixed twelve months before using so much the better. After the bed has been allowed a few days to settle (for the compost will be at first two or three inches above the level of the garden), the plants should be carefully taken up, trimmed of their runners, and planted four inches apart every way. A frame like that for a hotbed should be put over the bed as soon as the weather begins to get cold, taking care to let the plants be near the glass, or oiled paper or canvas, which will do as well. The frame should be put on permanently as soon as the frost sets in, and not taken off at all (unless the weather should change to wet, and the plants should want drying), till the flowers appear. Should the weather prove severe, a lining of dry litter should be placed round the outside of the frame to exclude the frost. To obtain a succession of flowers, some plants may be placed in shallow 32-sized pots, and placed in heat (not more than 65 Fahr.) so as to flower from October to November, while those in the frame will flower from November to February; and others, merely under hand-glasses, will come in from February to April." The only objection to the above plan is, that unless the plants are attended to carefully, the leaves and flower-buds are frequently destroyed by damp, particularly if they are potted in August, as is frequently done, when they are put under the frame immediately, and kept there all the winter. To avoid this danger, a correspondent of the Gardener's Magazine recommends the following plan, which is a very good one, though, like the former, it requires a reserve garden, or some place not in sight, to set aside for the bed, as it is not at all ornamental in a flower-garden.

" Any time in the month of May mark out a piece of ground one foot wider on all sides than any frame or









frames which are likely to be unoccupied in the autumn and winter months. Dig a trench round the piece one spit deep and one wide, merely to keep the piece dry on which the frame will have to stand. Let the earth be thrown on the piece, and be neatly pointed down. Plant with young plants, about eight inches apart each way, and water them as soon as planted. If the weather is hot at the time of planting, shading for a few days while the sun is on them will be of service. A little water as occasion may require, and keeping free from weeds, are all that will be necessary till October; at which time the frame or frames may be placed over. Let it be particularly observed that the situation should be as open as possible, provided the sun will not shine into the frames during the winter months. I do not like them stuck behind a north wall, as such a place is usually damp; but in most places such a situation as I have described may be found. If not, and the sun must shine upon them, let the lights be shaded when the sun breaks out; otherwise the plants will be excited, and will suffer more from cold and damp afterwards than if they had never been protected. Whenever there is no fear of rain, and it is not frosty, let the lights be kept off; and if they are obliged to be on, let them be tilted behind at all favourable opportunities, night or day, as a dry atmosphere is of the highest importance. It will be found that violets treated in this way will not lose their foliage from damp, like those which have been potted; and, being exposed to the air, the foliage will not be drawn up so as to hide the flowers. If, when the frames are put on, the soil is lightly stirred, and decayed leaves and rubbish picked out, it rarely occurs that it will be necessary to repeat it all the winter. I do not recollect that mine have been picked over since the frame was put on; and I think that you will agree that this winter has been damp enough to prove it.

"By observing the above rules, abundance of flowers will be produced, and the plants may be potted a few at a time, choosing those for early potting whose flowers are most forward, and taking them into the greenhouse or elsewhere to open. If the plants are strong, one plant in a 48-sized pot will do, or two may be placed in a 32, as most convenient. I have sometimes planted a few about the borders of a conservatory; and, if they are allowed to open their flowers before they are taken from the frame, they look pretty and scent the house."—*Gard. Mag. for April, 1842.*

The Russian violet has single flowers, but it is so hardy that it will blossom all the winter without any care or protection. It should be planted in July or August, or the seeds sown as soon as ripe. If runners are planted, they should be shaded for a day or two till they have established themselves. They will require no further care, but will continue to flower, in spite of frost and snow. As they have few runners and take up but little room, they are very suitable for a small garden.

#### 8.—VIOLA CANINA, Lin. THE DOG-VIOLET.

**SYNONYMS.**—*V. sylvestris*, Lam.; *V. neglecta*, Schmidt.

**ENGRAVINGS.**—Eng. Bot. t. 620; 2nd ed. t. 331.

**SPECIFIC CHARACTER.**—Stigma papillose, somewhat reflexed; adult stems ascending, branched, glabrous; leaves oblong, heart-shaped;

stipules acuminate, serrated, or finely jagged; bracteas awl-shaped, entire; sepals awl-shaped; peduncles glabrous; capsules elongated, with acuminate valves; seeds pear-shaped, brown. (*G. Don.*)

**DESCRIPTION, &c.**—This well-known species is a native of Great Britain. Its flowers are pretty, but without fragrance; their colour is blue, with a white centre, streaked with very dark lines. The species is not worth cultivating, but it frequently springs up spontaneously in moist places among other violets. There are several varieties, one of which has white flowers, and another is a native of Japan. The British species continues in flower all the summer, and it will grow in any moist soil and shady situation.

9.—VIOLA PUBESCENS, *Ait.* THE DOWNTY VIOLET.**SYNONYMS.**—*V. pennsylvanica*, *Michx.*; *V. eriocarpa*, *Schw.***ENGRAVINGS.**—*Swl. Brit. Flow. Gard.* t. 100, t. 223; *Bot. Reg.* t. 390; and our *fig.* 5 in *Plate 20.***SPECIFIC CHARACTER.**—Villous; stems simple, rather decumbent;leaves cordate, acuminate, serrated; stipules large, ovate, serrated at the top, entire. Sepals oblong lanceolate; spur very short, somewhat saccate; ovary smooth. (*G. Don.*)

**DESCRIPTION, &c.**—This species has many stems springing from the same root, and as its flowers are yellow, it forms a very pretty tuft, alternately with some of the purple violets. There are two species nearly allied to *V. pubescens*, viz. *V. eriocarpa*, and *V. pennsylvanica*, all of them being natives of North America, and all only requiring a moist and shady situation.

10.—VIOLA PALMAENSIS, *Mackay.*

## THE PALMESE, OR TREE VIOLET.

**ENGRAVINGS.**—*Floral Cabinet*, vol. ii., pl. 165; and our *fig.* 2 in *Plate 20.***SPECIFIC CHARACTER.**—Suffruticose, branched, pubescent. Leaves linear-lanceolate, remotely dentate. Stipules lanciniated, nearly equal

to the leaves; segments obsolete near the base. Sepals linear-lanceolate, ciliated, spur incurved. Petals obovate, superior subemarginate, bearded at the base. Seeds angular.

**DESCRIPTION, &c.**—This species is half shrubby; it is quite hardy, and will grow in any common garden soil; and it is increased by cuttings of the tenderest young shoots, which should have a little heat to make them strike. The native country of this species is not known, but it was sent to England from Liege, about the year 1838. There are some other shrubby species, but they all require protection during winter.

11.—VIOLA ALTAICA, *Ker.* THE ALTAIAN VIOLET OR PANSY.**SYNONYMS.**—*V. grandiflora*, *Sievers*; *V. Pallasi*, and *V. chrysanthia*, *Fisch.*; *V. uniflora*, *Hort.***ENGRAVINGS.**—*Bot. Reg.* t. 54; *Bot. Mag.* t. 1776; and our *fig.* 6 in *Pl. 20.***SPECIFIC CHARACTER.**—Stem short; leaves oval; stipules cuneiform, with acute teeth; sepals acute, denticulated; spur very short, scarcely so long as the appendages of the sepals. (*G. Don.*)

**DESCRIPTION, &c.**—This species is one of the parents of the cultivated Heartsease; all those with pale yellow petals, with an undulated margin, being derived from this species. The common Heartsease, *V. tricolor*, is an annual, but the hybrids raised between it and *V. altaica* are mostly perennials; though they seldom flower well more than one season, unless propagated by cuttings. *V. altaica* is a native of the Altaic Mountains in Siberia, whence it was introduced in 1805. It is propagated by seeds (which it produces in abundance), or cuttings.

12.—VIOLA ROTHOMAGENSIS, *Desf.* THE ROUEN VIOLET OR PANSY.**SYNONYMS.**—*V. hispida*; *V. pilosa*.**ENGRAVINGS.**—*Bot. Mag.* t. 1498; and our *fig.* 7, *plate 20.***SPECIFIC CHARACTER.**—Hispid or pilose; root rather fusiform; stems zigzag, branched, diffuse; leaves ovate, but the lower ones aresomewhat cordate, crenate, fringed; stipules pinnatifid, rather lyrate; spur tubular, obtuse, shorter than the sepals; nectaries shorter than the stamens; seeds oblong-ovate. (*G. Don.*)

**DESCRIPTION, &c.**—This violet very much resembles *V. tricolor* in its shape, though not in its colour, as that is a pale blue streaked with dark lines. It is the parent of all the pale blue cultivated pansies, and hybrids between it and the preceding species are generally very beautifully streaked with dark lines. There is a variety in Pope's Nursery at Handsworth, near Birmingham, with purple flowers. It is a native of Normandy, whence it was introduced in 1783, and it is readily propagated by seeds or cuttings.

## OTHER SPECIES OF VIOLA.

These are very numerous, but only a few are seen in British gardens.

V. MONTANA, *Lin.*; *Bot. Mag.* t. 1595.

A most beautiful species, with pale blue flowers, which are of a much larger size than those of most of the other kinds of violet. The plant is also much larger, the stem frequently growing a foot and a half high, or more. It is a native of Switzerland, and other mountainous parts of Europe; and it was introduced in 1683. It is quite hardy, but it is generally propagated by dividing the roots, as only a few flowers in the upper part of the plant, which are generally without petals, produce any seeds.

V. CANADENSIS, *Lin.*; *Swt. Brit. Flow. Gard.* 2d ser. t. 62.

This is one of the most beautiful of all the violets. Several stems rise from the same root, all with broadly cordate leaves. The flowers, which are sweet-scented, are very pretty, having, when grown in pots in peat soil, white petals which are of a beautiful blue at the back. This has a very pretty effect at a little distance, as the flowers appear of a bright blue and clear white. When grown in the open border and in common soil, the backs of the petals become nearly white. The species is a native of Canada, whence it was introduced in 1783. The plants are propagated by division of the root.

V. PRÆMORSA, *Doug. Bot. Reg.* t. 1251.

A plant with very singular flowers, which have widely-spreading, narrow, bright yellow petals, very unlike those of most of the other species. It is a native of California, whence seeds of it were sent home by Douglas in 1827. It is quite hardy, and grows "readily among rockwork on the north side of large stones."

V. PERSICIFOLIA, *Roth.*

This species, which is a native of Germany, introduced in 1683, is very nearly allied to *V. montana*, from which it differs only in the leaves.

V. RUPPI, *All.*; *Lodd. Bot. Cab.* t. 686.

A native of the Alps; introduced in 1822, with pale blue, or white flowers.

V. BIFLORA, *Lin.*

A native of Europe, Asia, and the west coast of North America. The flowers are yellow but very small.

V. LACTEA, AND V. HIRTA, *Lin.*

These are two British species, with very pretty flowers.

V. NUMMULARIFOLIA, *All.*

A native of the rocks in the Alps of Piedmont and Dauphiny, introduced in 1820. The flowers are blue, with darker stripes, and the leaves are roundish. *V. alpina* is very nearly allied to this species.

V. CORNUTA, *Lin.*, *Bot. Mag.* t. 791.

A native of Switzerland and the Pyrenees, introduced in 1776. A tufted plant, with pale blue flowers. There are many other species, but those above described are most easily to be procured in British nurseries.

## CHAPTER IX.

## CARYOPHYLLÆ, OR SILENACEÆ.

**CHARACTER OF THE ORDER.**—Calyx five-toothed, five-cleft, or five-parted, or of five sepals. Petals four or five, unguculate, rarely absent. Stamens four or five, or eight or ten, hypogynous. Capsule two or five-valved, one or five-celled; placenta central. Nodose articulated herbs; leaves simple, opposite, or verticillate, rising from the nodi. (*G. Don.*)

**DESCRIPTION, &c.**—This order contains numerous handsome plants, but none more universally cultivated than the Pink and Carnation, both belonging to the genus *Dianthus*. Botanically, the plants belonging to it are characterised by the long claws of the petals, the opposite, narrow, undivided leaves, which have no stipules, the jointed stems, and the swelling of the stem at the joints, which are the nodes from which the leaves spring. The order is divided into two sections, viz., *Sileneæ*, which includes all the species with a tubular calyx; and *Alsineæ*, the species in which have the sepals of the calyx distinct, but the latter division contains mostly weeds.

## GENUS I.

DIANTHUS, *Lin.* THE PINK.

*Lin. Syst.* DECANDRIA DIGYNIA.

**GENERIC CHARACTER.**—Calyx tubular, five-toothed, furnished with two or six imbricated opposite scales at the base. Petals five, with long claws. Stamens ten. Styles two. Capsule one-celled. Seeds compressed. (*G. Don.*)

**DESCRIPTION, &c.**—The beauty and fragrance of most of the flowers belonging to this genus are so conspicuous, as almost to justify the name given to it of *Dianthus*, which signifies “divine flower.” The leaves are evergreen, and of a glaucous colour; so that even in winter a bed of pinks and carnations has a clothed and cheerful appearance. They are small and neat in shape, and have their veins in parallel lines like a monocotyledonous plant, only the midrib being conspicuous. The veins of the petals, however, are reticulated. Botanically the genus *Dianthus* is interesting from its calyx, which is tubular, being surrounded by a number of what are called calycine scales. These scales in most of the species lie close together, like tiles on the roof of a house; but in the Sweet William, and its allied species, they are lengthened into the appearance of sharply-pointed leafy bracts. There are numerous species of *Dianthus*; some of which are annual, some perennial, and some shrubby. The species are divided into several sections, some of which have the flowers in close clusters, and others have the flowers few, or many and loosely panicled.

## SECTION 1.—ARMERIASTRUM.

## FLOWERS CAPITATE OR CORYMBOSE, SESSILE OR STALKED.

1.—DIANTHUS PSEUDO-ARMERIA, *Bieb.* THE FALSE ARMERIA PINK.

**SYNONYMS.**—*D. barbatus*, *Pall.*, Long-scaled Pink, False Sweet William | bearded; leaves awl-shaped, strict, beset with scabrous pubescence. (*G. Don.*)

**ENGRAVING.**—Bot. Mag. t. 2288.

**SPECIFIC CHARACTER.**—Flowers in dense aggregate bundles; scales of calyx ovate, awl-shaped, equal in length to the limb; petals

VARIETY.—There is a variety with a short calyx, and widely-spreading bracts

**DESCRIPTION, &c.**—This species bears some resemblance to the Sweet William, but the flowers are smaller, and the calycine scales longer and more abundant. The petals are also of only one shade, and quite destitute of









the brilliancy of colour which is so agreeable in the Sweet William. The plant is also entirely covered with a very short and close pubescence. The flowers have no fragrance, and are almost hidden by the long sharply-pointed bracts. The species is a native of Caucasus, whence it was introduced in 1820. It is quite hardy, and thrives best in poor rocky or stony soil.

## 2.—DIANTHUS BARBATUS, *Lin.* THE BEARDED PINK, OR SWEET WILLIAM.

**ENGRAVINGS.**—Bot. Mag. t. 205; and our *fig.* 2 in Plate 22.

**SPECIFIC CHARACTER.**—Flowers aggregate, in bundles; calycine scales or bracts ovate, awl-shaped, equal in length to the tube; petals bearded; leaves lanceolate, nerved.

**VARIETIES.**—These are very numerous; the flowers in a bed of seedlings varying from dark-purple or crimson, through rose-colour

and pink, to white. Some are also semi-double, and others double; nearly all of which have existed in British gardens since 1629, as Parkinson mentions them in his *Paradise, &c.*, published in that year. What is called the mule Pink is generally said to be a hybrid between this species and the Carnation.

**DESCRIPTION, &c.**—This species appears to have been introduced as early as 1552, in the reign of Elizabeth, though it must have been soon lost, as it seems to have been re-introduced in 1573. It is a native of Germany, and is quite hardy in British gardens. The flowers of the Sweet William are produced in large clusters, each separate flower resembling a small Chinese pink, except in the calycine scales or bracts, which are very long and sharply pointed. Some of the varieties are very beautiful, particularly the deep rose colour, and one which is white, spotted with pale pink. The most beautiful varieties I ever saw of this plant were in Scotland, at Milton Lockhart on the Clyde, where the Sweet Williams were so beautiful as almost to deserve to take rank as florists' flowers. Some of the varieties have also more fragrance than others. Though the Sweet William is a perennial, it is not a long-lived plant, particularly in London or any other large town, or if the soil be very moist or very dry; and it seldom flowers well after the second year. These plants do best when treated as biennials, in the same manner as recommended for the Brompton stocks (see p. 81). The double kinds may be increased by cuttings, pipings, or layers, in the same manner as carnations and pinks.

## 3.—DIANTHUS AGGREGATUS, *Poir.* THE CROWDED PINK.

**ENGRAVINGS.**—Swt. Brit. Flow. Gard., 2nd ser. t. 166; and our *fig.* 1 in Plate 22.

**SPECIFIC CHARACTER.**—Flowers aggregate, sessile; calycine scales

ovate, mucronate, short; petals toothed, beardless; leaves glaucous, broad, channelled, without nerves, connate and ciliated at the base. (*G. Don.*)

**DESCRIPTION, &c.**—This splendid species is closely allied to the Sweet William, but the bracts or calycine scales are broader and more erect, so that they have not the same bristly or fringed appearance. The flowers are very large, and of a most brilliant scarlet, so dazzling indeed as to be almost painful to look at in the sunshine. The native country and year of introduction of this plant are unknown, but it does not appear to be either a hybrid or a variety of the Sweet William, though some have supposed it to be so. It is quite hardy in British gardens; and is a true perennial, lasting several years in a light sandy soil, and being propagated by layers or pipings like the carnation, as it rarely ripens seed.

## 4.—DIANTHUS CARTHUSIANORUM, *Lin.* THE CARTHUSIANS' PINK.

**ENGRAVINGS.**—Swt. Brit. Flow. Gard., 2nd ser. t. 282; Bot. Mag. t. 2039; and our *fig.* 4 in Plate 22.

**SPECIFIC CHARACTER.**—Flowers aggregate, oblong, capitate, stalked;

calycine scales four, ovate, awned, shorter than the tube; involucrum oblong, awned, shorter than the head of flowers; petals crenate; bearded; leaves linear, 3-nerved. (*G. Don.*)

**DESCRIPTION, &c.**—A pretty little species, introduced about the same time from France or Italy, that the

Sweet William was from Germany. Though not so showy as many of its brethren, it has a pretty effect when sown or planted in patches in a light sandy loam, where it will continue to produce a succession of flowers during the whole of the summer and autumn. It is propagated by seeds or pipings.

### 5.—DIANTHUS ARBUSCULUS, *Lindl.* THE SHRUBBY CHINESE PINK.

**SYNONYME.**—The little Tree Pink.

**ENGRAVINGS.**—Bot. Reg. t. 1086; and our *fig. 1* in Plate 21.

**SPECIFIC CHARACTER.**—Flowers panicled, aggregate, or solitary; leaves lanceolate, glaucous, and glabrous. Calycine scales four, broad,

ovate, leafy, erect, equal to the calyx in length, or sometimes much shorter than the calyx, and ending in a small cuspidate point. Petals toothed.

**DESCRIPTION, &c.**—This very handsome species has double flowers, and has never been seen in England in a single state. It is a native of China, whence it was introduced in 1824. It requires a little protection during winter, but it flowers freely in the open ground from July to October. It has a half shrubby stem, and is propagated by cuttings.

## SECTION II.—CARYOPHYLLUM.

### FLOWERS EITHER PANICLED OR SOLITARY.

#### 6.—DIANTHUS CAUCASICUS, *Bieb.* THE CAUCASIAN PINK.

**ENGRAVINGS.**—Bot. Mag. t. 795; and our *fig. 2* in Plate 21.

**SPECIFIC CHARACTER.**—Stem branched, smooth; flowers almost sessile, | solitary. Calycine scales ovate, awned, erect, shorter than the calyx.

Leaves awl-shaped, with scabrous margins. (*G. Don.*)

**DESCRIPTION, &c.**—This species is a native of Mount Caucasus, whence it was introduced in 1803. The flowers are small, and the petals are so deeply cut at the margin, as to look almost fringed. The leaves are small, deeply-keeled, and very glaucous. It flowers in July and August. It is quite hardy; and, like the common pink, it is generally propagated by layers.

#### 7.—DIANTHUS SYLVESTRIS, *Jacq.* THE WOOD PINK.

**SYNONYMES.**—*D. virginicus*, *Sims*; *D. rupestris*, *Lin.*; *Caryophyllum sylvestris*, *Burm.*

**ENGRAVINGS.**—Bot. Mag. t. 1740; and our *fig. 3* in Plate 21, under the name of *D. virginicus*.

**SPECIFIC CHARACTER.**—Stem branched or simple. Flowers solitary, or panicled. Calycine scales two or four, very short, ovate; when four, the outer ones acute, and the inner ones bluntish. Petals very broad, beardless, toothed. Leaves crowded, awl-shaped, stiff.

**DESCRIPTION, &c.**—This species, which is found in great abundance in rocky and stony places on Mount Jura and the neighbouring Alps, has been supposed by some botanists to be the wild carnation. The flowers have, however, no fragrance; and the leaves, which are crowded together at the root, are short, awl-shaped, slender, and very stiff; while the stems are long and weak. The plant has a creeping root, or rather underground stem, which is very difficult to eradicate when once it has taken hold of the soil. It is a native of Germany, whence it was introduced in 1814; and it is quite hardy if planted in a dry soil, though it is very easily killed by wet.

#### 8.—DIANTHUS PUBESCENS, *Sib. and Smith.* THE PUBESCENT PINK.

**ENGRAVINGS.**—Swt. Brit. Flow. Gard., 2nd ser. t. 27; and our *fig. 7* in Plate 21.

**SPECIFIC CHARACTER.**—Stem ascending, villous, 2—5 flowered;

flowers solitary; calycine scales ovate, awl-shaped, only half as long as the tube; calyx striated, villous, clammy, with short teeth; leaves linear, villous.

**DESCRIPTION, &c.**—The whole plant is thickly covered with a short dense pubescence. The stem is very

much branched, and each branch being tipped with a flower, the whole, at a little distance, has the appearance of a cluster ; though, when closely examined, the stems will be found too long to place the species in the section with clustered flowers. The calycine scales are remarkably long, and they rise so high round the flower, as to appear like a second calyx enveloping the real one. The species is a native of Greece, near Athens, and it was introduced in 1820. It is a biennial.

#### 9.—DIANTHUS ALPINUS, *Lin.* THE ALPINE PINK.

**SYNONYME.**—*D. glacialis*, var. *latifolia*, *Dec.*

**ENGRAVINGS.**—Bot. Mag. t. 1205 ; and our *fig.* 4 in Plate 21.

**SPECIFIC CHARACTER.**—Stem leafy, 1-flowered ; outer calycine

scales two, about equal in length to, or shorter than, the tube. Petals crenated.

Leaves oblong-linear, obtuse, green. (*G. Don.*)

**DESCRIPTION, &c.**—This beautiful little pink is found only on the highest mountains of Austria and central Europe, and in a wild state it has rarely more than a single flower upon each stalk ; but in cultivation it acquires numerous flowers, and becomes a most ornamental tufted plant for rockwork. The flowers are large, and very handsome, though the plant is dwarf. It was introduced in 1759, and is quite hardy in British gardens, flowering in June.

#### 10.—DIANTHUS DISCOLOR, *Sims.* THE TWO-COLOURED PINK.

**ENGRAVING.**—Bot. Mag. t. 1162.

**SYNONYME.**—*D. montanus*, *Dec.*

**SPECIFIC CHARACTER.**—Flowers solitary, calycine scales ovate-acu-

minate, spreading. Corolla unequally serrated, two-coloured. Leaves lanceolate, rough, longer than the internodes.

**DESCRIPTION, &c.**—This flower can never be confused with any other, from the decided difference of colour in the petals, which are pink on one side, and a yellowish green on the other. The leaves are longer and broader than usual, and not so glaucous, and the whole plant is very showy, but the flowers have no fragrance. The species is a native of Mount Caucasus, and quite hardy in British gardens. It flowers in July. It is propagated by seeds or layers like the common pink.

#### 11.—DIANTHUS ARENARIUS, *Lin.* THE SAND PINK.

**ENGRAVINGS.**—Bot. Mag. t. 2038 ; and our *fig.* 6 in Plate 21.

**SPECIFIC CHARACTER.**—Stem almost one-flowered, calycine scales ovate-obtuse. Corolla much cut. Leaves linear.

**DESCRIPTION, &c.**—This plant is remarkable for its deeply cut petals, which look quite fringed, being minutely cut to below the middle. They are also each marked with a faint green spot, covered with short dark purple hairs. The stem divides near the root into several branches, which are woody at the base, terminated by tufts of leaves, from the centre of each of which springs a stem, seldom bearing more than two flowers. The species is a native of the north of Europe, and was introduced in 1804. It only requires a sandy soil, and is quite hardy ; but it is too slender and delicate to look well among stronger and more brilliant flowers.

#### 12.—DIANTHUS LIBANOTIS, *Lab.* THE MOUNT LEBANON PINK.

**ENGRAVINGS.**—Bot. Reg. t. 1548 ; Swt. Brit. Flow. Gard. 2d ser. t. 231 ; and our *fig.* 5 in Plate 21.

**SPECIFIC CHARACTER.**—Stem erect ; flowers twin. Calycine scales

six, acuminate ; only half the length of the tube. Petals very much cut. Leaves linear-lanceolate.

**DESCRIPTION, &c.**—This Dr. Lindley thinks the finest species of the genus, and it certainly is extremely

beautiful. It was found by Labillardière, upon the highest points of Mount Lebanon, and introduced in 1831, from Dr. Fischer of the Botanic Garden at St. Petersburg. The plant grows about four feet high; and it requires a warm dry situation, and a light loamy soil. It is increased by cuttings, layers, or pipings; though it requires some care to make them take. The species has not yet ripened seeds in this country, probably from the late period of its flowering.

### 13.—DIANTHUS FISCHERI, *Spreng.* DR. FISCHER'S PINK.

**ENGRAVINGS.**—Swt. Brit. Flow. Gaid. t. 245; and our *fig.* 3 in Plate 22.

**SPECIFIC CHARACTER.**—Stem erect, paniculately branched, flowers in crowded corymbs. Calycine scales ovate, cuspidate-acuminate, erect, only half the length of the tube. Petals much cut, hairy at the throat. Leaves lanceolate, serrulately-rough.

**DESCRIPTION, &c.**—A showy plant producing a great abundance of fragrant flowers. The stem, which grows about eighteen inches high, is much branched; and both stem and branches are covered with a rough pubescence. The flowers are large and crowded, forming large crowded corymbs. The margin of the leaves is quite rough, with cartilaginous teeth; and the petals are bearded at the throat. The species is a native of the south of Russia, introduced in 1820; and it is quite hardy in British gardens, if planted in a dry soil, though it is liable to be injured by wet. It is propagated in the usual way by seeds, cuttings, pipings, or layers.

### 14.—DIANTHUS SUPERBUS, *Lin.* THE SUPERB PINK.

**SYNONYMS.**—*Caryophyllus sylvestris*, *Clus.*; *C. plurarius austriacus*, the feathered Pink of Austria, *Park.*

\* **ENGRAVING.**—Bot. Mag. t. 297.

**SPECIFIC CHARACTER.**—Flowers panicled; calycine scales very short, acuminate. Corolla much cut into hair-like divisions. Stem erect

**DESCRIPTION, &c.**—This very elegant plant is remarkable for its delightful fragrance; its fringe-like petals; the long slender tube of the calyx, and the shortness of the calycine scales. The species has white flowers; but there is a variety, the flowers of which are purple. The fragrance of this species is so powerful, that Parkinson describes it as “comforting the spirits and senses afar off.” The cut flowers are not, however, suitable for a nosegay; as from their extreme delicacy they soon fade. The species is a native of Germany, and other parts of Continental Europe, whence it was sent to England before 1596; and it is quite hardy in British gardens, though, as it is a short-lived plant, it should be propagated every second year by seeds or layers, the seeds being sown in spring. The flowers appear in August, and continue till October.

### 15.—DIANTHUS CARYOPHYLLUS, *Lin.* THE CARNATION, OR CLOVE PINK.

**SYNONYMS.**—Clove Gilly-flower.

**ENGRAVINGS.**—Bot. Mag. t. 39; and our *figs.* 1 to 4 in Plate 23.

**SPECIFIC CHARACTER.**—Stem branched; flowers solitary; calycine scales four, very short, ovate, rather mucronate; petals very broad; leaves linear, awl-shaped, channelled, glaucous. (*G. Don.*)

**VARIETIES.**—D. C. 2 flore pleno, *Dec.* The double carnations and picotees. D. C. 3 fruticosus, *Dec.* The tree carnation. D. C. imbricatus, *Dec.* The wheat-ear carnation. D. C. 5 Carduinus, *Ser.* The whole plant is covered with hollow prickles. Of the common double carnations and picotees there are many sub-varieties.

**DESCRIPTION, &c.**—The wild Carnation, of which there are two kinds, one with rose-coloured flowers and of a dark crimson, is found in Britain, growing on old stone walls, and sending down its long slender roots among the mortar, in cracks between the stones. Thus, it is found in abundance on the ruinous walls of Rochester and Deal Castles, and on the walls of Norwich and other fortified towns. The variety called the Wheat-ear Carnation, is remarkable for its calycine scales, which are numerous and scale-like, being laid over each other









like the tiles of a house ; or rather, so as to make the unopened buds look like ears of corn. The most common carnations are, however, those springing from the first or double-flowered variety, usually called the Clove Pink. This flower is of a rich dark crimson, or blood-colour, and it is remarkable for the richness of its fragrance. It is used in medicine, and for making a kind of liqueur, which is said to have a very powerful effect on the spirits. The garden carnations are all more or less variegated, and they are divided into three kinds, viz., the flakes, the bizarres, and the picotees, which are sub-divided into about five hundred named florists' flowers. The flakes have only one colour, on a white or yellow ground, in broad stripes, going quite through the limb of the petal, from the margin to the faux or throat. Bizarres have two colours, on a white or yellow ground, in irregular stripes and spots of pink or scarlet and purple, sometimes going through the whole petal, and sometimes broken irregularly. Picotees have a white or yellow ground, delicately edged or spotted with some dark colour, the spots being extremely small and delicate—whence the name, which is derived from *piquetée*, or spotted. Each of these kinds are again divided by their colours, as scarlet-flake, pink-flake, purple-flake, scarlet-bizarre, &c., &c. ; as it must be observed that the stripes or spots in carnations are always either scarlet, purple, or pink, or some shade of these colours, on a white or yellow ground.

The soil in which carnations are grown should be a very rich loam, mixed with a little sand, and as carnations are found to suffer exceedingly by the changes in the weather, they are generally kept in pots, which are more under the control of the grower than any bed can be in the open air. Carnations are, however, often very fine in beds, if the beds be well drained, in a warm open situation, and filled with a rich soil, properly prepared. The preparation of the soil is considered of so much importance by carnation growers, that every work published by a florist on the cultivation of the flower, is full of directions for preparing the soil ; and each florist has some particular receipt which he considers better than any other. One of the best, because the most simple, is that recommended by Maddock, in his *Florists' Directory*. According to this work, the best compost to be used for "such carnations as are grown in or near large towns," consists of one barrow-load of half rotten horse-dung a year old, two thirds of a barrow-load of sound fresh loam, and one third of coarse sea or river sand. These ingredients should be mixed together in autumn, and then formed into a heap about two feet thick, which should be left in an open situation, and turned over two or three times in the course of the winter, when it will be ready for use in spring. When it is not convenient to get all the ingredients in autumn, the dung alone, after it has been used as a hot-bed, may be thrown in a heap for the winter ; and, as its surface freezes, it may be pared off and laid on one side till the whole mass has been thoroughly frozen through. The loam and sand may in this case be added in February or March, but the whole must be thoroughly mixed together before it is used. In a pure air in the country, the proportions of dung and loam may be reversed, as less manure will be wanted than in town ; and if too much manure be used, the colours will not be clear.

When the compost is properly prepared, if intended for pots, it should be sifted through a coarse sieve, to take out any stones or other extraneous matter it may contain. The pots should be "at least twelve inches wide at top, six inches at the bottom, and ten inches deep in the inside ; with a circular aperture in the centre of the bottom of about an inch in diameter ; also three or four smaller holes round the sides of the pot, close to the bottom, to prevent the possibility of water lodging or remaining in that part." It is common to put an oyster-shell over the hole in the bottom of the pot, but this is a bad plan, as the oyster-shell is often pressed down flat over the hole, so as to cover it entirely, and the water being unable to escape, soddens or sours the soil,

so as to render it unfit to support vegetable life. The best mode of draining a pot is to put several crocks, or pieces of broken pot, at the bottom, laid one over the other, so as to keep the hole open. Some persons use small pieces of freestone for the same purpose, and these have the advantage of absorbing the moisture and parting with it slowly, so that they prevent the soil from becoming quite dry.

Carnations should be repotted for flowering about the middle of March. The pot should be first about half filled with compost, having the sides higher than the centre; and the plants, which are generally kept during winter in small pots having four plants in each, should have the ball of earth containing the plants carefully turned out of the pot, "and after rubbing off about half an inch of the surface of the old mould, round about the plants above their fibres, cleansing them, and cutting off the decayed points of their leaves, the ball is to be carefully placed in the centre of the pot, and the space between it and the sides filled up with the prepared compost. It is very necessary to be attentive in placing the plants, that they are neither planted deeper nor shallower than they were before; the compost should therefore be high enough to replace the old earth that was rubbed off on potting, exactly to the same height as before, that is half an inch higher than the ball of old earth and fibres; and the whole surface of the earth in the pot, when the operation is finished, should be nearly level or flat; but by no means higher at the centre than at the sides, because the plants would thereby be kept too dry; nor should the compost come nearer than within an inch of the top or rim of the pot, after it has been gently shaken, or struck against the ground on finishing, as an inconvenience will attend its being too full, when the operation of laying comes to be performed, which requires some additional mould on the surface, for the layers to strike into." When the plants are potted, they are placed in an open airy part of the garden on a bed set apart for that purpose, and covered with an archway formed of a great number of half hoops, that mats may be thrown over them to protect them from the effects of cold drying winds, heavy rain, and frosty nights; and while here they are regularly watered once a day with soft water from a fine round watering-pot.

When the Carnations are to be planted in the open ground, a bed about four feet wide, and of any required length, is excavated above two feet deep; at the bottom of which is placed a layer, about six inches deep, of brickbats, stones, and rubbish, to ensure drainage: on this is put the compost, which is raised a little above the bed to allow for sinking, and the plants are then planted in the same manner as in the pots, and treated in the same manner afterwards.

When the flower-stems are eight or ten inches high, they must be supported by sticks which are as high as the hoops will permit; but which must be replaced by other sticks about four feet long, when the plants are removed to the stage where they are to blossom. These sticks are generally painted green, and are broader at the bottom than at the top, to make them take a firm hold when they are plunged into the earth. As the stems advance in height they must be tied to these stakes, so that there may be a tie about every six inches up the stem; and the plants should be carefully looked at every two or three days, as they are apt to be attacked by insects, which should be washed off by dipping the shoot in clear water, and brushing it, if necessary, with a soft brush. When the calyx has swelled to nearly its full size, it is apt to burst and let out the petals on one side, which destroys the beauty of the flower; and to avoid this disaster, carnation-growers either tie the calyx round with a strip of wet bast mat, or put a narrow slip of bladder round it, with the ends wrapping over each other, which they attach with gum-water. When the flowers expand, they require to be shaded either by a paper cover fixed on the stick, or by a cloth awning stretched over the whole bed. The same awning as served









for tulips will do very well ; but carnations are generally placed on a stage or platform when about to flower. When the carnations are in flower, they should be frequently examined to search for earwigs, which eat their way into the calyx and devour the claws of the petals. Sometimes a ring of brass wire is attached to the stick to support the flower ; and sometimes a piece of card is slipped over the calyx, before the expansion of the flower, to keep the claws of the petals together, as otherwise the petals become loose, and soon lose their beauty.

Carnations are propagated by layers, pipings, or seeds. Layers are shoots buried in the ground, so as to force them to take root at a joint, without separating them from the mother plant. This operation is best performed when the plants are in full bloom, which is generally about the middle or end of July. A number of pegs should be provided of bone, fern, or wood, each five or six inches long, with a short hooked end, and the operator should have a sharp penknife. The layer may have four or five joints ; and the lower leaves next the root are all to be cut or stripped off close, till within two or three joints of the end of the layer. Some persons also clip off the extreme point of the shoots "with a knife or pair of scissors, so as to leave them only an inch and a half, or two inches, in length, from the joint whence they proceed, according to the strength and substance of the layers." When all the layers in a pot are thus prepared, the surface of the earth must be cleared, and stirred about an inch deep, and the pot filled nearly level with some carnation compost, or other light rich mould, taking care that it is not of too fine a grain. The layer should then be cut about half through, about a quarter of an inch below the second or third joint from the tip, the knife being introduced on the side next the ground, and cut in a sloping direction upwards, "through the middle of the joint, and half or three quarters of an inch above it ; the small portion left under, and connected with the joint, is to be cut off horizontally, quite close to the bottom of the joint, but not into it, as it is from the outer circle of the bottom of the joint that the fibres proceed, consequently that part should not be injured ; but it is necessary to cut it off close to the joint, for it would decay if suffered to remain, and perhaps communicate its rottenness to the joint itself, and destroy the plant." (*Flor. Dir.* p. 184.) After the incision, the wounded branch must be carefully laid in the earth, and pegged down close behind the joint where the incision was made, great care being taken to avoid breaking it, or even cracking it at the joint ; and as there is great danger of this being the case from the great brittleness of the shoots, it is generally thought best to withhold water, and set the plant in the sun, so as to make it flag a little before the operation is commenced. When the layer is pegged down, the end of the shoot should be raised gently up with the hand, so as to cause the incision to gape, and the joint should be covered lightly with earth ; "for if it be buried more than half or three quarters of an inch deep, it will lose much of the benefit it should derive from the influence of the air, &c., and be more liable to decay ; at all events, it will require a longer time to strike root." The stalk of the layer should only be covered at the joint ; as if any of the foliage be buried, the moisture of the earth will make it decay, and the shoot becoming rotten will damp off. As soon as the joint is pegged down, it should be gently watered to settle the soil, and if the earth should be washed off the joint by the watering, it should be covered again to the same depth as before. As soon as the layers have taken root, which will be the case with some sorts in about three weeks or a month after layering, and with others in about two months, they must be cut from the mother plant with about half an inch of stalk, and placed in small pots, four in a pot, for the winter. The pots should then be placed on a bed of coal ashes, or on a stone or slate shelf, as they are said to be rendered sickly if exposed to the vapour of vegetables in a state of decomposition. In the beginning of November, the plants are put into frames, which must be kept quite dry, or the plants will mildew.

They must likewise have air whenever the weather will permit, as they are quite as liable to be injured by wet as by frost. When the mildew makes its appearance, which it does in purple spots on the foliage, the plants should be instantly removed from the others, and either thrown away, or the infected parts cut out; as, if the infected plants are left amongst healthy ones, these last will soon become diseased.

Pipings are, properly speaking, cuttings; but they are called pipings, because sometimes they are pulled asunder by taking a shoot in one hand, and pulling it with the other just above a pair of leaves, so as to separate the upper part of the shoot from the lower, at the socket formed by the axils of the leaves; leaving the upper part, which was pulled off, with a tubular or pipe-like termination. The piping is generally two or three joints long, and when not pulled, it is cut off just below a joint. Some cultivators cut off the tips of the leaves, but others think this practice injurious. As soon as the cuttings or pipings are made, they are placed in pots in light soil, and covered with a hand-glass. Sometimes the pipings are put into a slight hotbed, covered with sifted mould, without any pots, and picotees will strike well in a rich soil, in the open air. The pipings should be planted "about three quarters of an inch deep, and watered to make the soil adhere to them, and then the glasses may be placed over them, and left undisturbed for two or three weeks, unless the weather be very dry, in which case they will require a little water," which should be applied either before sunrise, or after sunset, watering "over the hand-glasses and surrounding soil, as this will be sufficient to keep the cuttings moist. After the first three weeks they may be allowed the free air for a short time each; and about the end of August, they will be rooted enough for being removed into pots." (*Flor. Jour.* p. 42.) Sometimes the ground is moistened before the pipings are put into it, and the hand-glass is pressed on it, in order that the cultivator may know how many pipings the space will hold. When the pipings or cuttings are rooted, they must be removed to pots to keep during winter, and treated in the same manner as the layers. Sometimes, instead of the compost recommended in p. 95, one of equal parts of light yellow loam, vegetable mould, and decayed manure. Another compost consists of equal parts of old cow-dung and loam. The last two mixtures have the advantage of being ready for use immediately. In all composts it must be kept in view, that unless the soil be rich, the herbage, or grass as it is called, will be poor, and the plants too weak to flower well; though, on the contrary, if the soil be too rich, the colours will run into one another, and will lose the beautiful clearness and distinctness which constitutes the chief merit of a fine carnation.

Seeds are seldom used in propagating carnations, except for raising new varieties; but when they are required they should be chosen from those flowers that have not many petals, but "their petals should be large, broad, substantial, and perfectly entire at the edge, and their colours rich, and regularly distributed." (*Maddock.*) Neither layers nor pipings should be taken from those plants that produce seeds; and as soon as the petals wither, they should be drawn carefully out of the calyx, as the claws are apt to decay and engender mouldiness, which will destroy the seeds. About September or October the seeds will be ripe; but they should not be gathered till they become of a very dark brown, or black. The seeds, when ripe, should remain in the seed-vessel, and be kept in a dry room till May, when they should be sown in pots, in light rich mould, or carnation compost, and kept in the open air, in an airy part of the garden, shaded from the heat of the sun, till the plants are about three inches high, when they should be planted out in a bed of good rich mould, about ten or twelve inches apart, and kept there till they flower, when it will be seen what are deserving of being kept, and what should be thrown away. No carnations are esteemed that are not round, and regularly formed, and clear in colour; the margins

of the petals are also smooth. The picotees, on the contrary, have the margins of the petals generally finely serrated. The culture of the picotee is exactly the same as that of the carnation; except that, as it is much hardier, it does not require so much care during winter.

### 15.—DIANTHUS PLUMARIUS, *Lin.* THE COMMON, OR FEATHERED PINK.

**SYNONYMES.**—*D. dubius, Horn.*; *D. moschatus, Hort. Par.*

**ENGRAVINGS.**—Figs. 1 to 4 in Plate 23.

**SPECIFIC CHARACTER.**—Glaucous; 2—3-flowered; teeth of calyx

obtuse; calycine scales somewhat ovate, very short, mucronate, close-pressed. Petals jagged, multifid, bearded, leaves linear, with scabrous margins. (*G. Don.*)

**DESCRIPTION, &c.**—The pink differs from the carnation, in being a much smaller flower, and in having the margins of the petals deeply cut or fringed. It is also so much hardier as seldom to be grown in pots. Pinks are indeed generally planted in the open border, without any other care than what is usually bestowed upon perennial flowers; but when it is wished to have the flowers fine, a bed is formed about two feet deep of fresh loamy soil, with a stratum of equal parts of two years' old cow-dung and earth, well mixed together, and about six inches thick, placed five or six inches below the surface. The pinks should be planted in this bed in August, or early in September; and they should be placed about nine inches apart. The bed should be rounded on the surface to throw off heavy rains; and it will require no other care, except an occasional watering in very dry weather, or a slight covering in very severe frosts, except keeping it free from weeds, and occasionally stirring the surface with a fork if it appears becoming too hard. Strong plants will throw up a great number of flower-stems, but these should be thinned out, and only the strongest left, as no plant, however vigorous it may be, should be suffered to bear more than twelve blossoms, and weakly plants not more than four or five. All the small side-buds should always be rubbed off, as they never produce fine flowers. When the pods appear greatly swelled and in danger of bursting prematurely, they should be tied round with a piece of bast mat, as pinks are still more apt than carnations to be spoiled by bursting irregularly on one side, particularly those kinds which have the calyx short and round. When this is the case, many botanists divide the sepals with a penknife as low as they think it necessary to produce a good flower; and this is called letting down the pod. Some persons cut small circular pieces of card which they put over the calyx so as to support the petals of the flowers; but these card boards are not suitable for pinks grown in the open air, as they are destroyed by much rain.

Pinks are propagated in the same manner as carnations; that is, by layering, piping, and seeds. In the latter case, those plants which have blossoms with few petals, and long narrow pods, produce the greatest quantity of seed, though such seed "will not be likely to produce such large and double flowers as that which is sowed from plants possessing superior qualities."

There are numerous kinds of pinks, the most beautiful of which are the varieties of laced pink, and Anna Boleyn. The laced pink (*figs. 1 and 2 in Plate 24*) has the broad part of the petal, marked with a border or lacing of brownish red just within the fringe, then a clear space of white, and near the claw, a blotch of rich dark-purple, which should look like velvet, and be as nearly black as possible. The other pinks which are not laced should have a dark band (*fig. 4*), on clear white. Some pinks are but little fringed, and it is considered a desirable object to get one rose-leaved, that is, with an entire margin. The handsomest pink grown in gardens is Anna Boleyn, *fig. 3 in Plate 24*; and it is one of the most abundant flowerers. In Mr. Hopgood's nursery in the summer of 1842, this pink was most splendidly in flower for several weeks.

## OTHER SPECIES OF DIANTHUS.

D. LATIFOLIUS, *Dec., Swt. Brit. Flow. Gard.* t. 2.

This species is closely allied to the Sweet William, but the leaves are broader, and the flowers of a deep rich crimson. Neither the native country nor year of introduction is known; and probably the plant is only a dwarf variety of *D. aggregatus* (see page 91). It is sometimes called *D. barbatus pumilus* or *D. pumilus*. This plant is generally thought difficult to grow, and, in fact, it will not live either in a clayey soil or in a very moist situation. The best way to treat it, is to prepare a small bed, by taking out the soil to about the depth of six inches, and filling up the space with old mortar and a very small portion of leaf-mould. The plants should then be planted, and it is impossible to conceive anything more splendid than they will be when in flower.

D. JAPONICUS, *Dec.*

This species, which has red flowers, was introduced from China in 1804. There are several kinds nearly allied to it.

D. BALBISII, *Dec.*; D. GLAUCOPHYLLUS, *Hornemann, Swt. Brit. Flow. Gard.*, 2nd ser. t. 23.

This pink has its flowers disposed in crowded heads like the Sweet William, but each flower individually is more cut at the margin, and the petals are wider apart. It is generally grown on rockwork, where it will continue in flower from July to October.

D. GIGANTEUS, *D'Urrville, Swt. Brit. Flow. Gard.* t. 288.

A tall plant with red flowers, nearly allied to *D. Ballisii*. It is a native of Bulgaria, whence it was introduced about 1827. In good soil it will grow four feet high.

D. BISIGNANI, *Ten., Bot. Reg.*, 1838, t. 29; *Syn.* D. RUPICOLA, *Dec.*

Is a showy, half hardy, suffruticose pink, with fleshy leaves. It is a native of Sicily and Naples, and it was introduced in 1825.

There are several other species of Dianthus with corymbose heads of flowers, but they are rarely seen in British gardens. The following are more or less allied to the Carnation.

D. CAMPESTRIS, *Bieb., Bot. Mag.* t. 1876.

This plant has small pink flowers, and a creeping underground stem, which sends up shoots at every joint. The petals are very much serrated. It is a native of Russia, and was introduced in 1815.

D. LEPTOPETALUS, *Willd., Bot. Mag.* t. 1739. *Syn.* D. POMERIDIANUS, *Bieb.*

This plant, which is more curious than beautiful, is remarkable for its long, narrow, white petals, and very slender stems; which are often two feet or more in height, though only bearing two or three flowers. It is a native of the country round Mount Caucasus. It flowers in July. Introduced in 1814.

D. CRENATUS, *Willd., Bot. Reg.* t. 256.

A species with long slender buds and white flowers. A native of the Cape of Good Hope; introduced in 1817.

There are many other species, but they are seldom seen in British gardens; and generally they are scarcely deserving of cultivation.







1) at the place of Park  
2. Wittenbach - 2 "Vidach" At a stone wall a common lizard



GENUS II.  
SILENE, *Lin.* THE CATCHFLY.

*Lin. Syst.* DECANTRIA TRIGYNIA.

**GENERIC CHARACTER.**—Calyx tubular, 5-toothed, naked. Petals | bifid scales. Stamens 10. Styles 3. Capsules 3-celled at the base, 5, bifid, unguiculate, usually crowned in the throat with as many | ending in six teeth at the apex. (*G. Don.*)

**DESCRIPTION, &c.**—The plants belonging to this genus have generally on their stems a kind of viscid frothy moisture, which is said to entrap flies. The name of Silene is from a Greek word alluding to the same moisture. The species are very numerous, and generally very much alike; they are nearly all hardy, and none of them are shrubs; many of them are English weeds, but the greater part are ornamental, and worth cultivating in a garden. Many of the species are annual. The colours of the flowers are white, red, or purple.

PLANTS TUFTED; ALMOST STEMLESS. SCAPES 1-FLOWERED.

1.—SILENE ACAULIS, *Lin.* THE STEMLESS CATCHFLY, OR MOSS CAMPION.

**ENGRAVINGS.**—Eng. Bot. t. 1081; 2d ed. t. 629; and Bot. Mag. t. 1881.

**SPECIFIC CHARACTER.**—Glabrous. Stems dense, humble. Leaves linear-lanceolate. Flowers didious from abortion; peduncles solitary, short, 1-flowered. Calyx campanulate. Petals obovate or obovate. (*G. Don.*)

**DESCRIPTION, &c.**—This very pretty little plant, which does not grow above six inches high, has pink flowers, and is admirably adapted for rockwork. There are several varieties, one of which has double flowers, and another is white. It flowers in June and July. This species is very common on the Scotch and Welsh mountains, and it is, indeed, found wherever there is mountain scenery in all the temperate regions of the northern hemisphere. When cultivated, it requires a dry, airy situation, and a very light sandy soil.

PLANTS CAULESCENT. FLOWERS SOLITARY, OR PANICLED. CALYX INFLATED, BLADDERY.

2.—SILENE FIMBRIATA, *Smits.* THE FRINGED CATCHFLY.

**SYNONYMS.**—*Cucubalus fimbriatus*, *Bieb.*; *C. multifidus*, *Adams*; *Lychnis Behen alba*, *Buxb.* undulated, on long footstalks. Flowers in large spreading panicles. Calyx greatly inflated with broad teeth. Petals fringed, incurved, appendages bifid.

**ENGRAVINGS.**—Bot. Mag. t. 908; and our fig. 8 in Plate 25.

**SPECIFIC CHARACTER.**—Pubescent. Leaves large, ovate-lanceolate,

**DESCRIPTION, &c.**—This very curious species is quite hardy, and very showy when in flower. The petals have the limb cut into very fine lobes, so as to appear fringed. The species is a native of Mount Caucasus, and it was introduced in 1803. The plant grows about two feet high, and it flowers in July.

3.—SILENE INFILATA, *Smith.* THE BLADDER CAMPION.

**SYNONYME.**—*Cucubalus Behen*, *Lin.*

**ENGRAVINGS.**—Eng. Bot. t. 164; 2d ed. t. 620.

**SPECIFIC CHARACTER.**—Flowers numerous, drooping, panicled. Petals deeply cleft with narrow segments; the coronal scales mostly wanting. Calyx smooth, inflated, reticulated. Leaves ovato-lanceolate.

**VARIETIES.**—These are very numerous, but the most remarkable

are the kind with double flowers, which is a most ornamental garden plant, and the Sea Campion, sometimes considered to be a separate species, and called *S. maritima*. The flowers of the Sea Campion are larger, and the petals are broader, and of a more brilliant whiteness than in the species. It is generally found on the sea-coast.

**DESCRIPTION, &c.**—This beautiful British plant is common not only in corn-fields and pastures, but by the road sides in every part of Britain, especially on chalky and calcareous soils. In gardens it is much improved

by cultivation, and the double-flowered variety is particularly handsome. It is also valuable for keeping in flower from June to September. The young shoots and leaves are eatable, and when boiled, they resemble green peas in flavour. The species will grow in any soil or situation, but it grows best in chalky soils, and where it has abundance of light and air.

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#### PLANTS CAULESCENT. FLOWERS DISPOSED IN VERTICILLATE PANICLES OR RACEMES.

##### 4.—*SILENE OTITES*, Pers. THE SPANISH CATCHFLY.

**SYNONYMS.**—*Cucubalus Otites*, Lin.; *Lychnis Otites*, Scop.

**ENGRAVINGS.**—Eng. Bot. t. 85; 2d ed. t. 624.

**SPECIFIC CHARACTER.**—Flowers diæcious. Petals linear, entire. Leaves spatulate, roughish. Stem erect, few-leaved. (*Smith.*)

**VARIETIES.**—These are numerous on the Continent, but only one appears to be in British gardens. This plant has a very high stem, with the whorls distant from each other, but many-flowered, and very dense.

**DESCRIPTION, &c.**—This species differs from the other kinds of *Silene*, in having the flowers in whorls. The flowers themselves, though small, are very pretty, and they droop gracefully from the great length of their footstalks. The species is a native of England, and grows best on sandy or gravelly soil.

#### PLANTS WITH STEMS. FLOWERS PANICLED, ERECT, OR DROOPING. CALYX TUBULAR, SOMETIMES CLUB-SHAPED AT THE APEX.

##### 5.—*SILENE SAXATILIS*, Bieb. THE STONE CATCHFLY.

**ENGRAVINGS.**—Bot. Mag. t. 689; and our *fig.* 9 in Plate 25.

**SPECIFIC CHARACTER.**—Smooth; stem few-leaved; radical leaves oblong, blunted, stalked; caudine one, lanceolate-linear. Calyx el-

vate, 10-striped. Flowers panicled, naked, drooping. Petals bifid, crowned.

**DESCRIPTION, &c.**—This very singular species is a night-flowering plant, giving out a delicious fragrance when it unfolds its flowers. It is a native of Siberia, whence it was introduced in 1800. It is quite hardy, and will grow in any common garden soil, and in any situation which is airy and tolerably dry, as it is very apt to be rotted off by wet. It flowers in June and July.

##### 6.—*SILENE VIRGINICA*, Lin. THE VIRGINIAN CATCHFLY.

**ENGRAVINGS.**—Bot. Mag. t. 3342; and our *fig.* 4 in Plate 25.

**SPECIFIC CHARACTER.**—Plant covered with clammy pubescence; stems procumbent, assurgent, branched; leaves lanceolate, lower ones

on very long footstalks, ciliated at the base; flowers large, panicled, sometimes crowded; calyx amply clavate; petals broad, bifid, crowned with long claws. (*G. Don.*)

**DESCRIPTION, &c.**—This species bears considerable resemblance to *S. regia*, but the flowers are much smaller and the leaves narrower. The species is a native of Virginia, whence it was introduced in 1783, though it is very seldom seen in gardens, the more beautiful *Silene regia* having completely supplied its place. When it is grown, any common garden soil will suit it.

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##### 7.—*SILENE ORNATA*, Ait. THE ORNAMENTAL CATCHFLY.

**ENGRAVINGS.**—Bot. Mag. t. 382; and our *fig.* 3 in Plate 25.

**SPECIFIC CHARACTER.**—Plant pubescent; stems erect, branched; leaves lanceolate bluntnish; flowers panicled; calyx cylindrical, ventri-

cose, with alternate stripes and veins; petals two-parted; lobes broad, denticulated, crowned. (*G. Don.*)

**DESCRIPTION, &c.**—This very ornamental species is generally considered only half hardy, but it has been









found that it will succeed very well in the open air. It is a biennial, and the best mode of treating it is to sow the seeds in pots, either in autumn or very early spring. In the first case, they should be kept under shelter all the winter, and planted out in spring; and in the second, the pots should be plunged in a hotbed as soon as the seeds are sown in February, and the young plants should be planted out in May. The species is a native of the Cape of Good Hope, and it was introduced in 1775.

**8.—SILENE PENNSYLVANICA, Michx. THE PENNSYLVANIAN CATCHFLY, OR AMERICAN WILD PINK.**

**SYNONYMES.**—*S. incarnata*, *Lodd.*; *S. caroliniana*, *Walt.*

**ENGRAVINGS.**—Bot. Reg. t. 247; and our *fig.* 2 in Plate 25.

**SPECIFIC CHARACTER.**—Viscidly pubescent. Radical leaves spat-

late; caulin ones lanceolate. Petals obtuse, somewhat emarginate, suberenate.

**DESCRIPTION, &c.**—This is a dwarf plant, with clusters of large pink flowers, which is very ornamental for rockwork, or in beds in geometrical flower-gardens. It is a hardy perennial, propagated by dividing the roots; and it will grow in any garden soil, and common situation. It is a native of Pennsylvania, and was introduced in 1806. It seldom grows above three or four inches high; but it bears a great profusion of flowers, each of which is as large as the flower of the wild pink.

**9.—SILENE CHLORÆFOLIA, Smith. THE CHLORA-LEAVED CATCHFLY.**

**ENGRAVINGS.**—Bot. Mag. t. 307; Swt. Brit. Flow. Gard., 2d ser., t. 263; Bot. Reg. t. 1989; and our *fig.* 7 in Plate 25.

**SPECIFIC CHARACTER.**—Plant very smooth and glaucous. Stems branched. Leaves elliptical, pointed, upper ones rather cordate;

flowers large, disposed in a terminal panicle. Calyx long, cylindrically-clavate, downy; petals two-lobed; lobes broad, obovate, with two-parted appendages. (*G. Don*)

**DESCRIPTION, &c.**—This is the most compact-growing of all the kinds of Silene; and it has broad, firm, well-coloured leaves, which contrast well with its large, pure white flowers, with pinkish calyxes, and which become pink in dying off; it also continues a long time in flower. It should be grown in a light, but rich loamy soil, when it will flower luxuriantly; but in poor sandy soil, or on rockwork, the flowers are small, and the whole plant becomes dwarfed. It is a native of America, where it was discovered by Tournefort; and it was introduced by Mr. Hunneman in 1796.

**10.—SILENE REGIA, Sims. THE ROYAL CATCHFLY.**

**SYNONYME.**—*S. virginica*, var. *Illinoensis*, *Mich.*

**ENGRAVINGS.**—Bot. Mag. t. 1724; Swt. Brit. Flow. Gard., 2d ser., t. 313, and our *fig.* 6 in Plate 25.

**SPECIFIC CHARACTER.**—Plant clammy, pubescent. Leaves ovate-

lanceolate. Flowers large, panicled. Calyx downy, long, tubular. Petals ob-lanceolate, undivided, crowned with bicuspitate appendages. Stamens very long. (*G. Don*)

**DESCRIPTION, &c.**—This splendid plant in rich soils grows three or four feet high; but in poor soils it is of comparatively very low growth, though it still produces a profusion of its splendid flowers. It is quite hardy, and will grow in any common garden soil and situation. The stems are hollow and jointed; and the leaves of a yellowish green. It thrives most in a compost of peat and loam, and it is propagated by division, as it rarely ripens its seeds in this country. It is a native of North America, where it was found on the banks of the Mississippi, growing in great abundance. It was introduced in 1811.

11.—*SILENE LACINIATA*, Cav. THE CUT-FLOWERED CATCHFLY.

**SYNONYME.**—*Lychnis pulchra*, Schlect.

**ENGRAVINGS.**—Bot. Reg. 1444; Paxt. Mag. of Bot., vol. i. p. 267; and our *fig.* 5 in Plate 25.

**CHARACTER.**—Plant pubescent. Stem erect, branched.

**DESCRIPTION, &c.**—A very showy species, a native of Mexico, but one which it is very difficult to manage. It will not thrive either in a stove or greenhouse, and yet it is scarcely hardy enough for the open air. The best way of treating it appears to be to keep it in a frame during winter, and to plant it in the open ground in spring, for it to flower during summer. It is generally increased by cuttings, as it seldom ripens seeds. It is a native of Mexico, and was introduced in 1823.

12.—*SILENE COMPACTA*, Fisch. THE COMPACT-FLOWERED CATCHFLY.

**ENGRAVINGS.**—Swt. Brit. Flow. Gard., 2d ser. t. 64; Lodd. Bot. Cab., t. 1638; and our *fig.* 1 in Plate 25.

**SPECIFIC CHARACTER.**—Plant glabrous, glaucous. Stem erect, branched; leaves ovate-cordate, sessile, with two large ones like an

involucrum near the corymb, appearing as if they were connate. Bracteas narrow, shorter than the pedicels. Flowers crowded into dense corymbs. Calyx very long, clavate. Petals ovate-acute, entire, crowned.

**DESCRIPTION, &c.**—This very beautiful species is a biennial, growing about two feet high in the open ground, and rather lower on rockwork. It is very handsome, and produces abundance of flowers. It is a native of Mount Caucasus, and quite hardy in British gardens. It was introduced in 1810. The seeds should be sown in March, and the plants should be transplanted in autumn to the places where they are to flower.

## OTHER SPECIES OF SILENE.

These are so extremely numerous, that it will only be necessary here to mention a few of the most prominent.

## S. STELLATA, Ait., Bot. Mag. t. 1107.

The flowers are white, without a crown, and the petals are fringed. It is a native of North America, from Virginia to Canada. It was introduced in 1696.

## S. PUSILLA, Waldst et Kit.; Swt. Brit. Flow. Gard. 2d ser. t. 40.

A very pretty little Alpine plant, growing in tufts, and with white flowers. A native of Hungary, on the Alps. Introduced in 1804.

## S. ALPESTRIS, Jacq.; Swt. Brit. Flow. Gard. t. 111.

The plant is glabrous, with a somewhat creeping root. The flowers are white and shining. A native of Austria, on the Alps; introduced in 1774. Both this and the preceding species are very suitable for rock-work.

## S. SAXIFRAGA, Lin.

A small plant, with pinkish flowers, a native of France; introduced in 1640.

## S. SUPINA, Bieb.

A very pretty species, with a procumbent stem, sending up erect shoots at intervals. The flowers have white petals, and the calyxes tinged with pink. The species is a native of Mount Caucasus, whence it was introduced in 1804. There is a variety with broader leaves.

Most of the other ornamented species of Silene are annuals.

## GENUS III.

LYCHNIS, *Lin.* THE LYCHNIS.*Lin. Syst.* DECANDRIA PENTAGYNYIA.

**GENERIC CHARACTER.**—Calyx cylindrical, clavate, 5-toothed, naked. Petals five, unguiculate, crowned with scales at the throat. Stamens ten. Styles five. Capsules one-celled. Anthophorum long or short. (G. Don.)

**DESCRIPTION, &c.**—The plants belonging to this genus have all showy flowers, most of which are, indeed, of so brilliant a scarlet as to give rise to the name, which signifies a link or lamp. Several species formerly included in this genus have been removed to *Agrostemma*; and others formerly included in *Agrostemma*, have been removed to *Lychnis*. All the species are hardy, and all remarkably showy. They are also mostly perennial; the only annuals now left in the genus being *L. cæli-rosa*, and its varieties.

1.—LYCHNIS CHALCEDONICA, *Lin.* THE SCARLET LYCHNIS.

ENGRAVING.—Bot. Mag. t. 257; and our fig. 1 in Plate 26.

**SPECIFIC CHARACTER.**—Plant smoothish, clammy. Flowers corymbose, in bundles; calyx cylindrical, clavate, ribbed, petals two-lobed.

**DESCRIPTION, &c.**—There are several varieties of this very showy species, as for example the double scarlet and the single and double white. Both the species and the varieties have been common for above two hundred years in British gardens, as they were mentioned by Gerard in 1596; and they were in such favour with Parkinson, that in his *Paradisus Terrestris*, published in 1640, he is represented in the frontispiece holding a double scarlet Lychnis in his hand. The species is a native of Russia, but it has been long in cultivation in every part of Europe, it being called *Croix de Malthe*, in France and Portugal, *Croce de Caraliere* in Italy, and *Croix de Jerusalem* in Spain. The culture of the Scarlet Lychnis is very simple. The species is increased by parting its roots in autumn, or by seeds sown in spring; but the varieties, and especially the double kinds, are best increased by cuttings, taken off before the flowers open, as when the root is divided, the flowers are apt to degenerate; the cuttings are, however, rather difficult to strike. All the kinds thrive best in a light rich loamy soil.

2.—LYCHNIS FLOS JOVIS, *Lin.* THE FLOWER OF JOVE, OR UMBELLATED LYCHNIS.

**SYNONYM.**—*Agrostemma Flos Jovis*, *Lin.*; the umbellated Rose Campion.

ENGRAVING.—Bot. Mag. t. 398.

**SPECIFIC CHARACTER.**—Plant white from tomentum. Flowers in

umbellate heads; calyx cylindrical, clavate, ribbed; petals two-lobed; anthophorum short, thick. Leaves lanceolate, clasping the stem, silky tomentum. (G. Don.)

**DESCRIPTION, &c.**—This species is by no means entitled to its lofty name of Flower of Jove, as it possesses very little beauty. The flowers are pink, and grow close together, so as to form a very small compact umbel; and the leaves are thick and covered with a silky or rather woolly down. The flowers are produced in June and July. The plant should be grown in rather a stiff loam, and it may be propagated by parting its roots, or by seed, the latter mode being thought the best. It is a native of Switzerland, and was introduced in 1726. There is a variety with the flowers on longer footstalks, and forming larger umbels.

3.—LYCHNIS CORONATA, *Thun.* THE CHINESE LYCHNIS.

**SYNONYMES.**—*L. grandiflora*, *Jacq.* | terminal and axillary ; calyx terete, clavate, ribbed ; petals lacerated ;  
**ENGRAVINGS.**—Bot. Mag. t. 223 ; and our *fig.* 2 in Plate 26. | anthophorum very long. Leaves ovate, almost sessile. (*G. Don.*)  
**SPECIFIC CHARACTER.**—Plant glabrous. Flowers solitary or tern,

**DESCRIPTION, &c.**—This very showy plant is a native of China and Japan, whence it was introduced by Dr. Fothergill, about 1772. It was first kept in a stove, then removed to the greenhouse, and lastly to the open air. It was at first thought very difficult to keep ; but it is now found only to want taking up occasionally and replanting. It is best propagated by cuttings, but it may also be divided at the root.

4.—LYCHNIS FULGENS, *Fisch.* THE FULGENT LYCHNIS.

**ENGRAVINGS.**—Bot. Mag. t. 2104 ; Bot. Reg. t. 478 ; and our *fig.* 3 in Plate 26. | calyx terete, clavate, woolly ; petals 4-cleft, outer segments awl-shaped ; | anthophorum short. Leaves ovate, hairy. (*G. Don.*)  
**SPECIFIC CHARACTER.**—Plant hairy. Flowers in fastigiate corymbs ;

**DESCRIPTION, &c.**—This plant differs from the common Scarlet Lychnis principally in the flowers being much larger, and the leaves broader, while the stem of the plant is much shorter. It is a native of Siberia, whence it was introduced in 1819. It requires the same treatment as the other species, and like all the kinds of Lychnis, it varies very much according to the soil and situation in which it is grown.

## GENUS IV.

AGROSTEMMA, *Lin.* THE ROSE CAMPION.*Lin. Syst.* DECANDRIA PENTAGYNYIA.

**GENERIC CHARACTER.**—Calyx egg-shaped, or campanulate, with five short teeth. Petals five, unguiculato, crowned. Stamens ten. Styles five. Capsule one-celled. Anthophorum very short or wanting. Leaves linear, lower ones spatulate. (*G. Don.*)

**DESCRIPTION, &c.**—The common Rose Campion is so well known that most persons have no other idea of flowers belonging to this genus than that they have thick woolly leaves and red flowers. Several species have, however, been removed to this genus from Lychnis, which give it quite a different character. The two genera are nearly allied, the only difference being that Lychnis has a club-shaped calyx, and a long anthophorum, or flower-stalk, within the calyx ; while in Agrostemma the calyx is tubular, and the anthophorum short. The name of Agrostemma is from two Greek words, signifying a field crown.

1.—AGROSTEMMA CORONARIA, *Lin.* THE COMMON ROSE CAMPION.

**SYNONYME.**—*Lychnis coronaria*, *Lam.* ; Rose Cockle ; Honesty, in the Midland Counties. | cles elongated, one-flowered ; calyx somewhat campanulate ; petals emarginate, crowned, serrated. Leaves lanceolate, very broad, leathery.

**ENGRAVINGS.**—Bot. Mag. t. 24 ; and our *fig.* 5 in Plate 26.

**SPECIFIC CHARACTER.**—Plant woolly. Stems dichotomous. Pedun-

(*G. Don.*)

**DESCRIPTION, &c.**—This plant is remarkable for its thick woolly leaves, which are covered with a silky down, so as to look quite white at a little distance. There are three or four varieties, one of which has white flowers, and one double. The species may be propagated by seeds, but the varieties by division of the root. The new plants should be planted without manure, and only watered for a day or two, as much manure, or much moisture, will be found very injurious to them. The species is a native of the mountains of Italy and Switzerland, and also of Mount Caucasus, and it was introduced before 1596.









## 2.—AGROSTEMMA BUNGEANA, D. Don. DR. BUNGE'S SCARLET CAMPION.

**SYNONYME.**—*Lychnis* Bungeana, *Fisch. et Metz.*

**ENGRAVINGS.**—Swt. Brit. Flow. Gard. 2d ser. t. 317; Bot. Reg. t. 1864; Bot. Mag. t. 3594; and our fig. 4 in Plate 26.

**SPECIFIC CHARACTER.**—Stem pubescent. Leaves ovate-lanceolate, ciliated, sessile. Flowers axillary, or terminal, solitary. Calyx hairy, deeply ten-angled. Petals wedge-shaped, deeply cut.

This splendid flower was found in a garden at Pekin, by Dr. Alexander Bunge, who was attached to the Russian mission to China, and sent by him to St. Petersburg, whence it reached England in 1835. It appears hardy in the climate of London, but it requires full exposure to the light, without which its flowers soon become weak and lose their brilliancy of colour. It should be planted in rich soil, and as it is much affected by cold and drying winds, it thrives best when covered with a hand-glass or some other protection in frosty weather and east winds. It is propagated by division of the root or cuttings.

## OTHER SPECIES OF AGROSTEMMA.

A. SYLVESTRIS, *Hoppe*. LYCHNIS DIOICA, *Lin.*; L. DIURNA, *Sibth.*; RED CAMPION.

This is a well-known British plant, the double variety of which is very handsome, and is common in gardens.

A. DIOICA, *G. Don.*; L. DIOICA, var. *B* *Lin.*; L. VESPERTINA, *Sibth.*; L. ALBA, *Mill.*

This is the white-flowered variety of the old *Lychnis dioica*, from which it differs principally in the lobes of the petals being much broader, and the capsules conical instead of roundish. The flowers are also fragrant in an evening, which those of the red-flowered kind never are. There are three varieties, one with the flowers double, another with the flowers some bluish coloured and some white on the same plant, and the other with double flowers, having green petals.

A. FLOS CUCULI, *G. Don.*, L. FLOS CUCULI, *Lin.*, RAGGED ROBIN.

A well-known British plant, a double-flowered variety of which is often found in gardens. There is also a variety with white flowers.

## GENUS V.

GYPSOPHILA, *Lin.* THE GYPSOPHILA.*Lin Syst.* DECANDRIA DIGYNIA.

**GENERIC CHARACTER.**—Calyx campanulate, angular, somewhat five-lobed, with membranous margins. Petals five, not unguiculate. Stamens ten. Styles two. Capsule one-celled. (*G. Don.*)

**DESCRIPTION, &c.**—Most of the species are little insignificant plants, well adapted for rockwork, but some are large enough for border flowers. A chalky soil is most suitable to them, and hence the name of the genus, *Gypsophila*, signifying chalk-lover. The species are generally propagated by seeds, which they ripen in abundance; but cuttings under a hand-glass will strike root freely. Several of the species are annuals; and of the perennials the most common in British gardens are *Gypsophila prostrata*, Bot. Mag. t. 1281, and our fig. 8 in Plate 26, and *G. repens*, Bot. Mag. t. 1448.

## GENUS VI.

SAPONARIA, *Lin.* SOAPWORT.*Lin. Syst.* DECANTRIA DIGYNIA.

**GENERIC CHARACTER.**—Calyx tubular, five-toothed, naked at the base. Petals unguiculate; claws equal in length to the calyx. Stamens ten. Styles two. Capsules one-celled. (*G. Don.*)

**DESCRIPTION, &c.**—The plants belonging to this genus differ from those included in *Dianthus*, principally in having no calycine scales. The name of *Saponaria* alludes to the soapy properties of the British species, as even the leaves will make a lather, and take out spots of grease, &c., like soap. Most of the species are annuals or biennials; and the latter should be grown in sand, loam, and peat, in a dry situation, as they are easily injured by wet, and may be propagated by seeds or cuttings. The perennials are mostly only half hardy, and have their flowers in heads. All the species are very ornamental.

1.—SAPONARIA OCYMOIDES, *Lin.* THE BASIL-LIKE SOAPWORT.ENGRAVING.—*Bot. Mag.* t. 154.

glandular hairs. Leaves ovate-lanceolate, generally one-nerved.

**SPECIFIC CHARACTER.**—Stem procumbent, dichotomous. Flowers (G. Don.) in panicled bundles; calyx cylindrical, villous, purple, beset with

**DESCRIPTION, &c.**—A very elegant plant, with trailing stems and pink flowers, which as it will only thrive in a pure air and dry situation, is admirably adapted for rockwork. It flowers profusely, and continues producing a succession of blossoms during the whole of the summer. It seldom produces seeds, but is readily propagated by cuttings. It is a native of the South of Europe, whence it was introduced in 1768. It is perfectly hardy.

2.—SAPONARIA CALABRICA, *Guss.* THE CALABRIAN SOAPWORT.

**ENGRAVINGS.**—*Swt. Brit. Flow. Gard.* 2d ser. t. 79; and our *fig.* 7 in Plate 26.

| axillary, solitary; calyx cylindrical, beset with glandular villi. Petals orbicular, narrowed at the base. Seeds tubercular, rather globose.

**SPECIFIC CHARACTER.**—Root fibrous. Stem erect; dichotomously branched. Leaves obovate-spatulate, usually one-nerved. Flowers

(G. Don.)

**DESCRIPTION, &c.**—This very beautiful little plant was described by Gussone, who named it, as an annual; but it is now found to last two or three years, and sometimes more. The flowers are very brilliant in colour, and are produced in great abundance. The stem is procumbent, and the whole plant is admirably adapted for rockwork. It grows well in any light rich soil, and strikes readily by cuttings. It is a native of Calabria, whence it was introduced in 1830.

3.—SAPONARIA GLUTINOSA, *Bieb.* THE GLUTINOUS SOAPWORT.**SYNONYME.**—*Silene Armeria*, *Pall.*

| in corymbose bundles; calyx long, terete, beset with glandular hairs.

ENGRAVING. *Bot. Mag.* t. 2855; and our *fig.* 6 in Plate 26.

Leaves ovate, three-nerved. (G. Don.)

**SPECIFIC CHARACTER.**—Stem erect, branched. Flowers panicled,

**DESCRIPTION, &c.**—This plant grows two or three feet high in favourable situations. The flowers are small, but they are of a most brilliant crimson, and the calyx, stem, and veins of the leaves are of a brilliant purple. It is a native of Mount Caucasus, whence it was introduced in 1817. It is quite hardy, and flowers in June; but it should be grown in a light soil, and open situation.

## OTHER SPECIES OF SAPONARIA.

S. ELEGANS, *Lap.*

With large rose-coloured flowers.

S. LUTEA, *Lin.*

With yellow flowers; and

S. BELLIDIFOLIA, *Smith.*

With crimson flowers and golden-yellow stamens, are all very handsome, but they are only half-hardy.

## CHAPTER X.

## LINACEÆ.

**CHARACTER OF THE ORDER.**—Sepals three to five. Petals three to five. Styles three to five. Capsule ten-celled; cells two-seeded. Seeds five, hypogynous. Stamens three to five, combined at the base. compressed.

## GENUS I.

LINUM, *Bauh.* THE FLAX.*Lin. Syst. PENTANDRIA PENTAGYNYIA.*

**GENERIC CHARACTER.**—Sepals five, entire. Petals five. Stamens five. Styles five; rarely one, or three. (*G. Don.*)

**DESCRIPTION, &c.**—The different kinds of Flax are all handsome flowers; and like many other plants, they contradict De Candolle's hypothesis, that bright yellow and bright blue flowers are never found in the same genus. The word Linum is from the Celtic word for thread, in allusion to the use made of the fibres of the annual species, *L. usitatissimum*.

1.—LINUM FLAVUM, *Lin.* THE YELLOW FLAX.

**SYNONYMES.**—*L. campanulatum*, *B Dec.*; *L. monopetalum*, *Steph.*; *L. latifolium luteum*, *Bauh.*; *L. glandulosum*, *E Dec.*

**ENGRAVINGS.**—*Bot. Mag.* t. 312; *Swt. Brit. Flow. Gard.*, 2d ser. t. 303; and our figs. 5 and 6 in Plate 27.

**SPECIFIC CHARACTER.**—Plant woody at the base, greenish. Leaves

furnished with two glands at the base of each, alternate, narrow, lanceolate, acute, sessile, with smooth margins. Branches of panicle dichotomous. Corolla monopetalous, five-cleft. Sepals acuminate, serrulated; petals very blunt, three times longer than the calyx.

**DESCRIPTION, &c.**—This very pretty plant, which grows about a foot high, is found in great abundance near hedges and among woods on mountains in Germany and Switzerland. It is quite hardy in British gardens, and succeeds best in a stiff moist soil. The flowers begin to expand in June, and they continue opening in succession throughout July and August; and they are followed by seeds, by which the plant may be increased, or by division of the roots, or cuttings. It was introduced in 1793.

2.—LINUM MONOGYNUM, *Forst.* THE ONE-STYLED FLAX.

**ENGRAVINGS.**—*Swt. Brit. Flow. Gard.* 2d ser. t. 370; and our fig. 2 in Plate 27.

**SPECIFIC CHARACTER.**—Perennial, erect, glabrous. Leaves lanceolate,

acutely three-nerved. Flowers corymbose; calycine leaves ovate-lanceolate, acute, keeled. Styles connate.

**DESCRIPTION, &c.**—This species has white flowers, which are produced in corymbose clusters, so as to form a showy head. The leaves are lanceolate and spreading; and they are quite of a glaucous or bluish green. The

flower-stalks are angular, and the five styles in the centre of the flower appear to be united into one. This species is a native of New Zealand, whence it was introduced about 1835; and it should be grown in a mixture of peat and loam. It is almost hardy, but it requires a little protection during winter. It is propagated by division of the roots, cuttings, or seeds.

### 3.—LINUM VISCOMUM, *Lin.* THE CLAMMY FLAX.

**SYNONYMS.**—*L. hypericifolium*, *Nal.*; *L. venustum*, *Andr.*; | **SPECIFIC CHARACTER.**—Leaves lanceolate; three or five nerved, Yellow-flowered Flax. | alternate, and somewhat opposite; partly covered with glandular hairs.

**ENGRAVINGS.**—Bot. Mag., t. 1048; Bot. Rep., t. 477; and our fig. 1 in Plate 27.

**DESCRIPTION, &c.**—This is a very handsome species, of which there are several varieties, differing but little from each other; the most showy being that figured in Plate 27, under the name of *L. hypericifolium*. This variety is a native of Mount Caucasus, but the species is found wild in Germany and Italy. Both the species and the varieties are quite hardy, and only require planting in rich loamy soil. They are perennials, but do not live many years. They may be propagated either by seeds or cuttings.

### 4.—LINUM ASCYRIFOLIUM, *Sims.* THE ASCYRON-LEAVED, OR BLUE-AND-WHITE FLAX.

**ENGRAVINGS.**—Bot. Mag. t. 1087; and our fig. 3, in Plate 27.

**SPECIFIC CHARACTER.**—Leaves alternate, three-nerved, ovate, cor-

date, pubescent, upper ones somewhat opposite Flowers somewhat spiked; sepals acuminate, hairy. (*G. Don.*)

**DESCRIPTION, &c.**—This very handsome species has the flowers white, streaked with bluish veins. This flax, we are told in the Botanical Magazine, was first found by Clusius, who, “in his account of the plants of Spain and Portugal, describes a sort of Flax which he met with near a deserted church in Portugal, putting forth fresh shoots in the month of November, and luckily with some of the seed-vessels still remaining on the withered stalks. These he took with him to Holland, and raised a single plant, which continued to bear flowers at the latter end of the summer for some years, but produced no seed. He describes this plant as bearing from one root three or four slender downy stems a foot high, divided near the top into two or three branches, rolled back at their extremities, and covered with white flowers veined with purple, nearly as large as those of the Mallow. The leaves, he says, are rather wide, downy, three-nerved, and not unlike those of the Ascyron (*Hypericum quadrangulare*).” It is evident that *L. ascyrifolia* is the same as the plant described by Clusius; and it was introduced in 1800. It has, however, long been lost; and it is in the hope that it may be reintroduced, that it has been here described so much at length. It is quite hardy in British gardens, and only requires to be grown in a rich loamy soil, like the other species.

### 5.—LINUM SIBERICUM, *Dec.* THE SIBERIAN FLAX.

**SYNONYMS.**—*L. petenne*, var. *Sibirica*, *Lin.*, *L. austriacum*, *Sims.*

**ENGRAVINGS.**—Bot. Mag. t. 1086; and our fig. 4 in Plate 27.

**SPECIFIC CHARACTER.**—Plant glabrous, erect, tall. Leaves linear,

acute, spreading, without dots. Sepals oval, 5-nerved at the base, outer ones acutish, inner ones very blunt, all with membranaceous margins. Petals entire, three or four times larger than the calyx.

(*G. Don.*)

**DESCRIPTION, &c.**—This very handsome plant differs from the common perennial flax in having much larger flowers, which are of a deeper blue, and form a more compact panicle. It is found wild in Siberia, and also in Austria; and it is generally found in nurseries under the name of the Austrian flax. It is quite hardy, and will grow in any soil that is not too light. It is propagated by parting the roots.









6.—*LINUM ALPINUM*, Willd. THE ALPINE FLAX.

**SYNONYME.**—*L. perenne γ alpinum*, Schiede.

**ENGRAVING.**—Swt. Brit. Flow. Gard. t. 17; and our *fig. 7* in Plate 27.

**SPECIFIC CHARACTER.**—Plant glabrous, decumbent, many-stemmed.

Leaves linear, awl-shaped, spreading, full of pellucid dots. Flowers few, rather corymbose. Fructiferous peduncles erect. Sepals oval, 3-nerved at the base, with membranaceous margins; outer ones acutish; inner ones obtuse; twice as large as the calyx. (*G. Don.*)

**DESCRIPTION, &c.**—This very pretty little plant has flowers resembling those of the common perennial flax, on numerous very slender stems. It is a dwarf plant, seldom growing above six or eight inches high; and it is admirably adapted for rockwork, as, unlike most of the other plants belonging to the genus, it likes a light sandy soil and a dry situation. It has also the great advantages, of not growing fast, and taking up very little room. It is a native of the South of France, the North of Italy and Germany, on high mountains. It was introduced in 1739.

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OTHER SPECIES OF *LINUM*.

*L. PERENNE*, Smith; *Syn. L. ANGLICA*, Mill.

A perennial flax, with pale blue flowers. A native of England; found generally on chalky or sandy soils.

*L. MEXICANUM*, H. B. et K., Bot. Reg. t. 1326.

A very pretty half-hardy species, with yellow flowers. A native of Mexico, introduced in 1828.

*L. MARITIMUM*, Lin.; *Syn. L. HETEROPHYLLA*, Mænch.

A sea-side plant, a native of the South of Europe. Introduced in 1596.

*L. CAMPANULATUM*, Lin.

A native of the South of Europe, with corymbose flowers; introduced in 1795.

*L. CAPITATUM*, Kit.

A native of the Croatian Alps. A dwarf plant, introduced in 1816.

*L. HIRSUTUM*, Lin.

Allied to *L. ascyrifolia*, but with rose-coloured flowers. Introduced from Italy in 1759.

*L. NERVOSUM*, Waldst et Kit.

The flowers are large and blue. The species is a native of Hungary, whence it was introduced in 1822.

*L. NARBONENSE*, Lin.; and our *fig. 8* in Plate 27.

This is one of the most beautiful of all the species of *Linum*. It is a native of Spain, the South of France, and Italy. The flowers are large, very beautiful, and generally of a most intense blue. It merely requires to be grown in the common garden soil; but it should be placed in an open, airy, sunny situation.

*L. LEWISII*, Pursh.; *Syn. L. SIBIRICUM*, var. *LEWISII*; Bot. Reg. t. 1163.

The flowers are very large and pale blue. The plant is glaucous. A native of North America. Introduced in 1826. It is very nearly allied to *L. Sibiricum*.

*L. GRANDIFLORUM*, Desf.

The flowers large and rose-coloured; and the species is a native of the North of Africa, whence it was introduced in 1820.

## CHAPTER XI.

## MALVACEÆ.

**CHARACTER OF THE ORDER.**—Sepals generally five, rarely three or four. Petals five, twisted in aestivation. Stamens numerous, hypogynous, and combined with the claws of the petals into a column, which girds the style and ovaria. Anthers one-celled. Carpels numerous, disposed in a whorl round the axis, capsular or baccate. (*G. Don.*)

## GENUS I.

MALVA, *Lin.* THE MALLOW.

*Lin. Syst.* MONADELPHIA POLYANDRIA.

**GENERIC CHARACTER.**—Calyx girded by a three-leaved involucrum, rarely by a five or six-leaved one; leaflets oblong or setaceous. Capsules capsular, one-seeded, verticillate, disposed in an orbicular head. Car- (*G. Don.*)

**DESCRIPTION, &c.**—Most of the perennial Mallows are tender or shrubby; but some of the herbaceous species, which were formerly thought half-hardy, are now found to succeed well in the open air. The shrubby kinds are still kept in the greenhouse. The words Mallow and Malva both signify mucilaginous. All the plants belonging to this genus, and indeed to the order, are easily recognised by their stamens growing together and surrounding the styles, so as to form a column in the centre of the flower.

1.—MALVA MUNROANA, *Dougl.* MR. MUNRO'S MALVA.

**ENGRAVINGS.**—Bot. Reg. t. 1306; Bot. Mag. t. 3537; and our fig. 2 in Plate 28.

**SPECIFIC CHARACTER.**—Plant clothed with white tomentum. Stems

ascending. Leaves roundish, cordate, somewhat five-lobed, crenate. Involucel setaceous. Peduncles axillary and terminal, panicles 3—5 flowered.

**DESCRIPTION, &c.**—This very handsome species was discovered by Douglas, on the plains near the Columbia, in July 1826, and it was named by him in compliment to Mr. Munro, the superintendent of the Horticultural Society's Gardens at Chiswick. It should be grown in sandy or gravelly soil, when it will flower abundantly from May to October. In rich soil it produces more leaves than flowers, and the leaves themselves lose that fine silky down that ought to cover them. It may be propagated by seeds or cuttings; or its ascending shoots may be allowed to take root at the base, in which case it will soon form a large bush. It is quite hardy; and during the summer of 1842 I saw it in Mr. Hopgood's garden, covered with flowers every day, and forming one of the most ornamental plants in the open border.

2.—MALVA PURPURATA, *Lin.* THE PURPLE MALLOW.

**ENGRAVINGS.**—Bot. Reg. t. 1362; Bot. Mag. t. 3814.

**SPECIFIC CHARACTER.**—Pubescent, ascending. Lower leaves five-cleft; upper ones three-cleft. Flowers solitary, on long peduncles.

**DESCRIPTION, &c.**—This species is represented in the Botanical Register with pink flowers, and in the Botanical Magazine with purple flowers; in the latter work it appears very ornamental, but I have never seen it growing. It is a native of the Chilian Andes, where it was found by Mr. M'Rae, in November 1825. It is quite hardy in this country, “increasing.” Dr. Lindley tells us, “very little by the root, but producing seeds in dry seasons. It flowers in June, and continues in beauty till the frosts of autumn nip it. It requires no particular attention; thrives in any common garden soil.”









3.—*MALVA ANGUSTIFOLIA*, Cav. THE NARROW-LEAVED MALLOW.

ENGRAVING.—Bot. Mag. t. 2839.

SPECIFIC CHARACTER.—Stellately pubescent. Leaves very long, lanceolate, crenately dentate. Peduncles axillary, four or five, spring-

ing from the same point. Fruit a globe, about the size of a pea, consisting of ten compressed capsules, each containing three kidney-shaped seeds.

DESCRIPTION, &c.—This species is remarkable for the length of its leaves, which is frequently as much as six inches, and consequently much greater than that of Mallow leaves in general. It is a native of Mexico, whence it was first introduced in 1798; but being soon after lost, it was re-introduced in 1826. It is quite hardy, and if planted in the open border, it will continue in flower all the summer and autumn. It will grow in any soil and situation.

4.—*MALVA CAPENSIS*, Lin. THE CAPE OF GOOD HOPE MALLOW.

ENGRAVING.—Bot. Reg. t. 295; and our fig. 3 in Plate 28, under the name of *M. angustifolia*.

SPECIFIC CHARACTER.—Pedicels 1 flowered; solitary or in pairs,

longer than the footstalks; leaflets of the outer calyx ovate-lanceolate, leaves 5-lobed and 3-lobed, crenate, toothed, clammy. (G. Don.)

DESCRIPTION, &c.—This species has been long common in greenhouses, but it is only lately that it has been tried in the open air, where it is found to succeed perfectly well during the summer, though it requires protection during winter. It is a native of the Cape of Good Hope, whence it was introduced so far back as 1713. It should be grown in light sandy soil, and if abundantly supplied with water, it will continue in flower all the summer.

5.—*MALVA ALCEA*, Lin. THE VERVAIN MALLOW.

ENGRAVING.—Bot. Mag. t. 2297.

SPECIFIC CHARACTER.—Lower leaves angular, upper ones 5-parted, cut. Stems and calyxes roughish velvety from stellate down. (G. Don.)

DESCRIPTION, &c.—This species is very distinct, from its deeply-cleft petals, which are placed so widely asunder as to have somewhat of a star-like appearance. The leaves are also deeply cleft, and the whole plant has the appearance of a kind of Lavatera. It grows about three feet high, and produces flowers nearly all the summer and autumn. It is a native of Germany and France, and it is quite hardy in the open border in British gardens. It was introduced in 1759.

## OTHER SPECIES OF MALVA.

*M. MORENI*, Poll.; Bot. Mag. t. 2793; *Syn. M. ALCEOIDES*, Ten.; *M. ALCEA, ♂ MORENI*, Dec.

A native of Italy, particularly near Naples. It is very nearly allied to *M. alcea*, only differing in its flowers being produced in tufts, and the segments of the leaves being somewhat broader.

*M. MOSCHATA*, Lin.

The Musk-mallow. A British species, frequently grown as an annual. There is a very handsome variety with white flowers; and another, which I found in Somersetshire, had the flowers quite blue.

*M. LATERITIA*, Hook.

A very handsome species with brick-red flowers, which resemble those of *M. Munroana*, but which are more than twice as large. It is a native of Buenos Ayres, and was introduced in 1840.

## GENUS II.

## ALTHÆA, Cav. THE MARSH MALLOW.

*Linn. Syst.* MONADELPHIA POLYANDRIA.

**GENERIC CHARACTER.**—Calyx five-cleft, girded by a six or nine-cleft involucle. Carpels capsular, 1-seeded, disposed into an orbicular head.  
(*G. Don.*)

**DESCRIPTION, &c.**—The mucilage in these plants is still more abundant than in the mallow; and it is used with success in several pulmonary complaints. Hence, the word Althea, which is derived from *altheo*, to cure. There are many species, but those best known in Britain are the Marshmallow and the Hollyhock.

1.—ALTHÆA OFFICINALIS, *Linn.* THE MARSH MALLOW.ENGRAVINGS.—*Eng. Bot.* t. 117, 2d ed. t. 961

5-lobed. Peduncles axillary, many flowered, much shorter than the

**SPECIFIC CHARACTER.**—Leaves clothed with soft white tomentum, leaves (*G. Don.*) on both surfaces, cordate or ovate, toothed, undivided or somewhat

**DESCRIPTION, &c.**—This plant is a native of the salt marshes on the sea-coast in Britain, and many other parts of Europe. The roots are long and thick, and they abound in mucilage, which is used in medicine. In France a lozenge is made of it, called *Pâte de Guimauve*. The flowers are very pretty, and they are produced from July to September, but the plant is seldom grown in gardens.

## 2.—ALTHÆA ROSEA, Cav. THE HOLLYHOCK.

**SYNONYM.**—*Alcea rosea*, *Linn.*

five or seven angles, crenated, rough flowers axillary, sessile, some

ENGRAVINGS.—*Bot. Mag.* t. 3198, and our fig. 1 in Plate 28

what spiky at top petals a little crenated, with villous claws

**SPECIFIC CHARACTER.**—Stem straight, hairy. Leaves cordate, with(*G. Don.*)

**DESCRIPTION, &c.**—The common Hollyhock is, as is well known, a very showy flower, which varies very much from seed, so as to produce a fine and varied effect in a garden. Hollyhocks look particularly well near an old baronial mansion, with architectural terraces; or in the borders on each side of a broad gravel walk. In good soil hollyhocks will grow from ten to fifteen feet high, producing a great quantity of large showy flowers. The species is a native of China, whence it was introduced in 1753, and it is quite hardy in British gardens. It is a biennial, and the usual mode of treating it is to sow the seeds in April, and the following September to prepare pits in the borders about four feet apart and two feet deep, putting two or three shovel-fulls of strong stable manure in each pit. The plants should then be carefully taken up and placed in the pits, which should be filled up with vegetable mould or some other light rich soil so as not either to injure or bend the tap root, or to rub off the slender fibrous roots springing from the tap root, which are necessary to supply nourishment to the plant. Thus treated, on a gravelly subsoil, hollyhocks have been grown from seventeen to twenty feet high. In clayey soils the pit may be dug six inches deeper, and the additional depth filled in with brickbats and lime rubbish. It may be then filled in with vegetable mould, and the plants planted, laying some manure on the surface, and watering them occasionally in dry weather. With this treatment the plants will attain a large size, and the flowers a brilliant colour. The original plants of hollyhock had red flowers, and hence the species received the name of *Althea rosea*; but now hollyhocks are grown with white, scarlet, purple, buff, or yellow flowers, with a variety

of intermediate shades, so as to form an ornamental garden in themselves. The seeds should be chosen from semi-double flowers; those produced by large flowers being preferred. Some persons sow the seed as soon as ripe, but when this is the case the young plants should be transplanted in April or May, when they will generally flower in the next August or September, and sometimes again the following year.

## GENUS III.

## KITAIBELIA, Willd. THE KITAIBELIA.

*Lin. Syst. MONADELPHIA POLYANDRIA.*

**GENERIC CHARACTER**.—Calyx five-cleft, girded by a seven or nine-cleft involucle. Carpels capsular, 1-seeded, collected into a five-lobed head (*G. Don.*)

**DESCRIPTION, &c.**.—There is only one species known of this genus, which was named in honour of Professor Kitaibel, of Pesth. in Hungary, whose name is so often given in conjunction with that of Count Waldestein, as an authority for the plants of Hungary.

## I.—KITAIBELIA VITIFOLIA, Willd. THE VINE-LEAVED KITAIBELIA.

ENGRAVING.—Bot. Mag. t. 821.

**SPECIFIC CHARACTER**.—Leaves 5-lobed, acute, toothed. Flowers axillary. (*G. Don.*)

**DESCRIPTION, &c.**.—This is a strong, robust-growing plant, rising to the height of seven or eight feet in strong moist soil; with very large dark green leaves, shaped like those of the vine, and rather small white flowers, with yellow stigmas and stamens. The plant is quite hardy, and will grow in any soil or situation which is sufficiently moist. It is a very showy plant for a shrubbery, or any place where there is plenty of room; but it is much too large for a small garden. It is a native of Hungary, where it was found by Professor Kitaibel, after whom it is named, and who was one of the authors of the large work called *Plante rariores Hungariae*. Plants first described in this work have generally the words Wald. et Kit. affixed to them, that being the contraction of Waldestein and Kitaibel. *Kitaibelia vitifolia* was introduced in 1801. It requires no particular care in its culture, and it is increased by dividing the root.

## GENUS IV.

## LAVATERA, Tourne. THE LAVATERA.

*Lin. Syst. MONADELPHIA POLYANDRIA.*

**GENERIC CHARACTER**.—Calyx 5-cleft, girded by a three or five cleft 1-seeded, disposed into an orb around the axis, which is variously involucrate; leaflets joined, especially to the middle. Carpels capsular, | dilated above the fruit. (*G. Don.*)

**DESCRIPTION, &c.**.—The genus Lavatera was so named by Tournefort, in honour of the two Lavaters, the celebrated physiognomists, who were physicians at Zurich. Most of the species are half hardy shrubs, or hardy annuals.

1.—LAVATERA THURINGIACA, *Lin.* THE THURINGIAN LAVATERA.

ENGRAVINGS.—Bot. Mag. t. 517; and our fig. 3 in Plate 29. lobe longest. Pedicels solitary, 1-flowered, longer than the petioles.

SPECIFIC CHARACTER.—Stem herbaceous, downy. Leaves rather | Petals 2-lobed. (*G. Don.*)  
downy, lower ones angular, upper ones 3—5-lobed, with the middle

DESCRIPTION, &c.—This plant is remarkable for a curious puckering of the petals at their margin in the centre, and for the large size of its flowers. It is quite hardy, as it is a native of Thuringia, in the north of Europe, from which place it was introduced in 1731, above a hundred years ago. It grows above five feet high, and keeps opening a succession of flowers from July to September. It will grow in any common garden soil, and it may be propagated either by dividing the root, or by seeds which it ripens in great abundance.

2.—LAVATERA TRILOBA, *Lin.* THE THREE-LOBED LAVATERA.

ENGRAVINGS.—Bot. Mag. t. 2226, and our fig. 2 in Plate 29.

SPECIFIC CHARACTER.—Stem subfuticose, downy. Leaves cordate, three-lobed, downy, somewhat crenate.

DESCRIPTION, &c.—This species, which is somewhat shrubby at the base of the stem, grows about three feet high, and flowers abundantly, though the flowers are much smaller than those of the preceding species. It may be planted in any common garden soil, but it requires a little protection during winter. It is a native of Spain, whence it was introduced before 1759. The flowers, which appear in June, July, and August, have a strong smell of musk.

## OTHER SPECIES OF LAVATERA.

L. PLEBEIA, *Sims.* Bot. Mag. t. 2269.

A mean-looking little plant, with small weak flowers; a native of New Holland, introduced in 1820.

L. BIENNIS, *Bieb.*

This species is nearly allied to *L. Thuringiaca*, but it is only a biennial. It is a native of Eastern Caucasus, and was introduced in 1819. It is quite hardy.

L. ARBOREA, *Lin.*

This is a British species, and though called the Tree Mallow, it is in fact only a biennial, and quite herbaceous. It is very handsome, and well deserving of cultivation in gardens, though it is very seldom seen in them.

L. NEAPOLITANA, *Ten.*

A native of Naples, by the sea-side, with purple flowers. Introduced in 1818.

## GENUS V.

HIBISCUS, *Lin.* THE HIBISCUS.*Lin. Syst.* MONADELPHIIA POLYANDRIA.

GENERIC CHARACTER.—Calyx encompassed by a many-leaved, rarely | valved, capsule, with a dissepiment in the middle of each valve on the  
by a few-leaved, involucre, sometimes connected at the base. Petals inside. Cells many-seeded, rarely one-seeded. (*G. Don.*)  
not auricled. Stigmas five. Carpels joined into a five-celled, five-

DESCRIPTION, &c. The flowers of the different species of this genus are all splendid; and the bark of all the shrubby kinds, and the outer covering of the perennials, is so tough, as to be made into ropes or spun into thread.









All the species are mucilaginous, and the name of *Hibiscus* is said to be derived from *Ibis*, a stork, that bird being very fond of chewing the bark of the shrubby kinds. Most of the species of *Hibiscus* are stove plants ; but one kind, *H. syriacus*, commonly called *Althaea frutescens*, is a hardy shrub, and some of the species are hardy, perennial, marsh plants.

### 1.—HIBISCUS MOSCHATOS, *Linn.* THE MALLOW ROSE, OR MUSK HIBISCUS.

**SYNONYME.**—*H. palustris*, *Sims.*

**ENGRAVINGS.**—*Bot. Mag.* t. 882 ; *Swt. Brit. Flow. Gard.* t. 286 ; and our fig. I in Plate 29.

**DESCRIPTION, &c.**—This is a very splendid marsh plant, producing several stems, each growing three or four feet high. It is quite hardy, but it will not flower unless planted in marshy ground, or near a pond, where the roots can have access to moisture. There is a variety sometimes called *H. palustris*, or the Marsh *Hibiscus*, with rose-coloured flowers. Both are natives of North America, from Canada to Carolina, and they were introduced before 1759.

### 2.—HIBISCUS ROSEUS, *Thor.* THE ROSE-COLOURED HIBISCUS.

**ENGRAVING.**—*Swt. Brit. Flow. Gard.* t. 277.

**SPECIFIC CHARACTER.**—Leaves cordate, toothed, somewhat three-

lobed, hoary from down beneath ; pedicels axillary, free, from the petioles, one-flowered, and jointed above the middle. (*G. Don.*)

**DESCRIPTION, &c.**—This species is very handsome, and it differs very little from the rose-coloured variety of *H. moschatus*. It is, however, a native of France, Italy, and Barbary, and was first introduced into England in 1644, though long lost, till re-introduced in 1827. Like the preceding species, though quite hardy, it will only flower in a very moist situation.

## OTHER SPECIES OF HIBISCUS.

*H. SPECIOSUS*, *Ait.*; *Syn. H. COCCINEUS*, *Walt.*, *Bot. Mag.* t. 360.

A very showy species, with scarlet flowers ; a native of the banks of rivers in South Carolina and Florida. Rather tender in winter. Introduced in 1814.

*H. GRANDIFLORUS*, *Michx.*

The flowers are large and flesh-coloured, with a dark centre ; and the fruit is yellow. A native of the banks of the Mississippi ; introduced in 1778.

## GENUS VI.

### CRISTARIA, *Cav.* THE CRISTARIA.

*Linn. Syst.* MONADELPHIA POLYANDRIA.

**GENERIC CHARACTER.**—Calyx naked, 5-cleft. Fruit orbicular, depressed, covered with a skin, consisting of several one-seeded carpels, which have two wings in the centre of each. (*G. Don.*)

**DESCRIPTION, &c.**—This genus takes its name from the crested carpels, *Cristaria* signifying crested. Only one species has been yet introduced, though several have been discovered in Peru.

1.—CRISTARIA COCCINEA, *Pursh.* THE SCARLET CRISTARIA.SYNONYMES.—*Sida coccinea*, *Dcc.*; *Malva coccinea*, *Fras.*

ENGRAVINGS.—Bot. Mag. t. 1673; and our fig. 7 in Plate 29.

SPECIFIC CHARACTER.—Plant bent, with hoary tomentum and starry leaves. Leaves 3—5-cleft, with cut acute segments. Racemes terminal. Stem diffuse, prostrate. (*G. Don.*)

DESCRIPTION, &c.—A very singular little plant, quite hardy in British gardens; a native of the dry prairies of the Missouri district of North America. It was introduced in 1811, but is very rarely met with.

## GENUS VII.

SIDA, *Cav.* THE SIDA.*Lin. Syst.* MONADELPHIA POLYANDRIA.

GENERIC CHARACTER.—Calyx naked, 5-cleft, usually angular. Styles with each other, or wholly connected into a many-celled capsule, multifid at the top. Carpels capsular, 5—40—1-seeded, seldom bladdery, disposed in a whorl round the axis, more or less connected.

DESCRIPTION, &c.—The species of this genus are very numerous, and differ so widely from each other in the structure of the fruit and seeds, that the genus will probably ere long be divided into several genera, and indeed some of the species have already been removed to Abutilon.

The derivation of the name of Sida is not known. Most of the species are stove plants, either shrubs or annuals, but a few are greenhouse perennials, and two or three species are hardy perennials; but the greenhouse kinds, which are said to have yellow flowers, have not yet been introduced into Britain.

1.—SIDA MALVÆFLORA, *Dcc.* THE MALLOW-FLOWERED SIDA.

ENGRAVINGS.—Bot. Reg. t. 1036; and our fig. 6 in Plate 29.

SPECIFIC CHARACTER.—Radical leaves roundish, 9-lobed, truncate at the base, lobes 3-toothed at the apex. Stem leaves 5-parted:

ments linear, subdentate. Flowers disposed in terminal racemes

Carpels mutic. (*G. Don.*)

DESCRIPTION, &c.—This is a showy-looking plant, with an upright flower-stem and very handsome leaves, which differ exceedingly in different parts of the plant. The root-leaves are roundish, and slightly cut into broad lobes; but the stem-leaves are cut to the base, and into such narrow segments as to make the segments look like separate linear leaves. The species was found in California, near one of the branches of the Columbia, by Douglas, and sent home by him in 1826. It is quite hardy, and flowers in October and November.

## OTHER HARDY SPECIES OF SIDA.

S. NAPÆA, *Cav.*; *Syn.* NAPÆA LÆVIS, *Lin.*, *Bot. Mag.* t. 2193.

A native of North America, always found in rocky places. Introduced in 1748. The flowers are small and white.

S. DIOICA, *Cav.*; *Syn.* NAPÆA SCABRA, *Lin.*

The flowers are small and white, and the species is a native of Virginia, whence it was introduced in 1759.

S. PINNATA, *Cav.*

A Peruvian plant, with large yellow flowers and pinnate leaves. Not yet introduced.

S. ACAULIS, *Cav.*

A native of Peru, with large yellow flowers, which are produced without any stem, and a very thick root. Not introduced.

S. PICHINCHENSIS, *Cav.*

A native of Quito, on the summit of the volcano Mount Pichincha, 7050 feet above the level of the sea. The leaves are quite white, from the silky down with which they are covered, and the large yellow flowers repose on them as on a bed. The plant is not above two inches high. Not introduced.

## GENUS VIII.

NUTTALIA, *Brown.* THE NUTTALIA.

*Linn. Syst.* MONADELPHIA POLYANDRIA.

GENERIC CHARACTER.—Calyx 5-cleft, persistent. Style 12-cleft, fringed. Carpels orbiculate, 12—1-seeded.

DESCRIPTION, &c.—Showy flowers, somewhat resembling the poppy, natives of North America, where the first species was found by Nuttall, and hence the genus has received the name of Nuttalia.

1.—NUTTALIA DIGITATA, *Burt.* FINGER-LEAVED NUTTALIA.

SYNONYMS.—*Cillitrich digitata*, *Nutt.* *Sida digitata*, *Sprng.* + SPECIFIC CHARACTER.—Glaucous. Leaves subpetiolate, 6—7-parted. ENGRAVINGS.—Swt. Brit. Flw. Gard., t. 129 and our fig. 4 in + with linear, entire, or 2-parted segments, upper ones more simple. Plate 29. Peduncles long, axillary, 1-flowered (*G. Don.*)

DESCRIPTION, &c.—This very handsome plant was first flowered in England at Mr. Barclay's at Bury Hill, in the open border. It is generally brought forward in pots in a hotbed, as it is only propagated by seeds; but when fully grown, it is quite hardy, and will thrive in the open border if planted in peat soil.

2.—NUTTALIA PAPAVER, *Grah.* THE POPPY-LIKE NUTTALIA.

ENGRAVINGS.—Swt. Brit. Flw. Gard., 2d ser., t. 279, Part 1 + SPECIFIC CHARACTER.—Root biennial. Stem erect. Radical leaves Mag. of Bot. vol. vi. p. 173; Bot. Mag. t. 3287, and our fig. 5 in five lobes, with broad segments, segments of the caudine leaves linear. Plate 20. Peduncles long, 1-flowered.

DESCRIPTION, &c.—This species is a biennial with a fusiform root. It should be grown in peat and loam, and is quite hardy in the open border. It is a native of Louisiana, whence it was introduced by Mr. Drummond in 1833. It is increased by seeds, which it ripens but sparingly. It is a very showy plant, and well deserving of cultivation.

## OTHER SPECIES OF NUTTALIA.

N. PEDATA, *Hook.*

A hardy perennial with dark purple flowers; a native of North America, introduced in 1824.

N. GRANDIFLORA, *Paxt. Mag. of Bot.* vol. v. p. 217.

A native of North America, introduced in 1837, with handsome dark crimson flowers. This species, if planted in the open border and protected, or in the free ground of a conservatory, will attain the height of five or six feet.

N. CORDATA, *Lindl.*, *Bot. Reg.* t. 1938.

A native of North America, introduced in 1835. This is a very pretty plant, with pale pinkish flowers.

N. MALVÆFLORA, *Paxt. Mag. of Bot.*, vol. vii., p. 31.

The flowers are small, and the plant rather tender. It is a native of Texas; introduced in 1839.

## CHAPTER XII.

### GERANIACEÆ.

**CHARACTER OF THE ORDER.**—Calyx permanent, of five sepals, more or less unequal. Petals five, rarely four or six, unguiculate. Stamens monadelphous at the base, rarely free, equal or double the number of the petals, rarely treble. Carpels five, 1-celled, 1-seeded, separating with elasticity. Herbs or soft-stemmed shrubs, with the young stems articulated. Lower leaves opposite, upper ones alternate.

#### GENUS I.

##### GERANIUM, *L'Her.* THE CRANE'S-BILL.

*Lin. Syst.* MONADELPHIA DECANDRIA.

**GENERIC CHARACTER.**—Sepals five, equal. Stamens ten, monadelphous at the base, rarely all fertile, but usually with the alternate ones fertile, with a gland at the base of each of the fertile ones. (*G. Don.*)

**DESCRIPTION, &c.**—The greenhouse plants usually called geraniums are now removed to the genus Pelargonium, from a very trifling difference in the calyx. The other differences are scarcely worth naming, except that in the geraniums the petals, which are large and roundish, are all equal; and in Pelargonium they are unequal, the upper two being larger than the rest. The species of true geranium are mostly hardy or greenhouse perennials. Some of the handsomest are British species, which are well worth cultivating in gardens, and are in fact often seen there.

##### 1.—GERANIUM IBERICUM, *Cav.* THE CAUCASIAN GERANIUM, OR CRANE'S-BILL.

**SYNONYME.**—*G. grandiflorum*, *Guld.*

**GRAVINGS.**—*Bot. Mag.* t. 1386; *Swt. Ger.* t. 84; and our *fig.* 4 in Plate 30.

**SPECIFIC CHARACTER.**—Stem villous, dichotomous, erect. Leaves

5—7-parted, with pinnately cut lobes and toothed lobules, villous; calyxes very villous. Petals obovate, or somewhat trifid. (*G. Don.*)

**DESCRIPTION, &c.**—A very handsome plant with large purple flowers and deeply cut leaves. It is a native of Mount Caucasus, whence it was introduced in 1802. It flowers in June, and grows about a foot high. It only requires planting in the open border; and it is propagated by dividing the roots.

##### 2.—GERANIUM ARGENTEUM, *Lin.* THE SILVER-LEAVED CRANE'S-BILL.

**GRAVINGS.**—*Bot. Mag.* t. 504; *Swt. Ger.* t. 59; and our *fig.* 3 in Plate 30.

**SPECIFIC CHARACTER.**—Stem very short. Leaves all almost radical,

on oblong petioles, hairy or silky on both surfaces, 5—7-parted, with trifid lobes and linear lobules. Peduncles almost radical. Petals emarginate. (*G. Don.*)

**DESCRIPTION, &c.**—This very pretty little plant, which is remarkable for its silvery leaves and large striped flowers, is a native of Germany, where it forms a close covering to some of the mountains. It is a dwarf plant, flowering in June and July; and in England is only suitable for rockwork, or for growing in a pot among other Alpine plants. It requires a pure air, a light and dry soil, and an open situation; but in other respects it is quite hardy. The best soil is very sandy peat. It is propagated by seeds, of which it ripens a few, or dividing the roots.









3.—GERANIUM WALLICHIANUM, *D. Don.* DR. WALLICH'S CRANE'S BILL.

**ENGRAVINGS.**—Bot. Mag. t. 2377; Swt. Ger. t. 90; and our fig. 2 in Plate 30.

**SPECIFIC CHARACTER.**—Stem decumbent, purple. Leaves 5-parted,

with broadly cuneated, ovate, deeply-toothed lobes, clothed on both surfaces as well as the stem with silky vell. Stipules ovate, obtuse. Petals emarginate; stigmas very long. *G. Don.*

**DESCRIPTION, &c.**—This species is a native of Nepaul, whence it was introduced in 1820. The stem is procumbent, and the leaves are covered with silky hairs. The flowers, which are very large and purple, are produced from June to September. The species is quite hardy, and it will grow in any common garden soil and situation. It is propagated either by seeds or division.

4.—GERANIUM ANGULATUM, *Sims.* THE ANGULAR-STALKED CRANE'S BILL.

**ENGRAVINGS.**—Bot. Mag. t. 203; and our fig. 1 in Plate 30.

**SPECIFIC CHARACTER.**—Radical leaves nearly seven cut, incised, hisp. Stem erect, somewhat angled. Petals veined.

**DESCRIPTION, &c.**—This species usually flowers in May, but frequently again in autumn. It is quite hardy in any common garden soil, and it is propagated by seeds or dividing the roots. It is an erect plant, and looks well as a border flower. It is not known of what country it is a native, or when it was introduced; but it was first observed in British gardens about 1789.

5.—GERANIUM ALBIFLORUM, *Graham.* WHITE-FLOWERED CRANE'S BILL.

**SYNONYMES.**—*G. erianthum*, *Dec.*; *G. Richardsonii*, *Fisch. et Mey.* deeply five-cut; segments ovate acuminate. Flowers on long peduncles; peduncles many-flowered. Petals entire; filaments hairy at the base.

**ENGRAVINGS.**—Bot. Mag. t. 3124; and our fig. 5 in Plate 30.

**SPECIFIC CHARACTER.**—Stem erect, round, dichotomous. Leaves

**DESCRIPTION, &c.**—This species is remarkable for its white flowers and glaucous leaves. It grows about two feet high. The leaves are so deeply cut as to be almost pinnatifid, and the flowers are small. It is a native of the Rocky Mountains of North America, and was introduced by Mr. Drummond in 1827. It is quite hardy, and flowers abundantly all the summer. It may be grown in any light garden soil (which is not so rich as to make it produce more leaves than flowers), and it is increased readily by dividing the roots.

6.—GERANIUM PHÆNUM, *Smith.* THE DUSKY CRANE'S BILL.

**ENGRAVINGS.**—Eng. Bot. t. 322; and our fig. 6 in Plate 30.

eled, or opposite the leaves. Calyx slightly awned. Petals waved.

**SPECIFIC CHARACTER.**—Stem erect. Peduncles two-flowered, panic-

Capsules keeled, hairy below, wrinkled above. (*Smith*).

**DESCRIPTION, &c.**—This species, though a native of England, is frequently grown in gardens from its great beauty, its flowers being of a peculiarly rich maroon colour, and of a fine and glossy texture. When wild, it grows in rocky woods and thickets to the height of about two feet; but in gardens it becomes dwarf and bushy. It flowers in May and June.

## OTHER SPECIES OF GERANIUM.

*G. SIBIRICUM, Lin.*

A native of Siberia, with white flowers; introduced in 1758.

*G. SANGUINEUM, Lin., Eng. Bot. t. 272; 2d ed. t. 977.*

A British species, with crimson flowers; of easy culture in any common garden soil.

G. LANCASTRIENSE, *Wall.*; *Syn.* G. PROSTRATUM, *Cav.*

A trailing species, with very large and beautiful flesh-coloured flowers, with purple veins. Found in various parts of Europe, and on the sandy beach of the Isle of Walney, in Lancashire.

G. CANESCENS, *L'Her.*

A silky-leaved plant, with pink flowers and long trailing stems; a native of the Cape of Good Hope. Introduced in 1787.

G. CINEREUM, *Cav.*; *Syn.* G. VARIUM, *L'Her.*

A native of the Pyrenees, with violet-coloured flowers and grey leaves, only six inches high.

G. MACRORHIZON, *Lin.*, *Bot. Mag.* t. 2420.

A very handsome species, growing about two feet high, with an erect stem; and the flowers, which are of a deep red or bright purple, in umbels. A native of the south of Europe, introduced in 1576, and quite hardy in British gardens, where it is very common. The name signifies long-rooted.

G. LAMBERTI, *Swt.*

A Nepaul species, with lilac flowers; introduced in 1825.

G. ERIOSTEMON, *Swt.*

There are two varieties of this species, one deep blue, and the other quite pale. It is a native of Dabusia, and was introduced in 1822.

G. PRATENSE, *Lin.*

A British species, of which there are numerous varieties; all with showy flowers.

There are many other species, all of which are more or less deserving of cultivation, and nearly all quite hardy.

## GENUS II.

ERODIUM, *L'Her.* THE HERON'S BILL.

*Lin. Syst.* MONADELPHIA PENTANDRIA.

**GENERIC CHARACTER.**—Sepals five, equal. Petals five, regular or irregular. Stamens ten, monadelphous at the base, five alternate ones sterile, with a gland at the base of each of the sterile ones. (*G. Don.*)

**DESCRIPTION, &c.**—This genus differs very little from Geranium, and principally in the seed-vessels, the awns of which are bearded inside, and twist up spirally, adhering by their points to the top of the style; whereas in the seed-vessels of the Geraniums the awns are smooth inside, and they twist or rather coil up in a revolute manner. The word Erodium signifies literally Heron's Bill, and it alludes to the shape of the capsule. The species are mostly hardy perennials and annuals, and many of them are British weeds.

1.—ERODIUM ROMANUM, *L'Her.* THE ROMAN HERON'S BILL.

**SYNONYME.**—*Geranium romanum*, *Lin.*

**ENGRAVING.**—*Bot. Mag.* t. 377.

**SPECIFIC CHARACTER.**—Stemless. Leaves pinnate; leaflets ovate, almost pinnatifid. Peduncles many-flowered; petals longer than the sepals.

**DESCRIPTION, &c.**—A lively little plant, with bright pink flowers, which it produces in great abundance, from April nearly all the summer. It is a native of Italy, and it is said by Linnaeus to grow spontaneously in the streets of Rome. It was introduced before 1724, and is admirably adapted for rockwork, growing with great vigour in any dry situation. It is propagated by seeds, which it ripens freely; and its cork-screw-like awns, as they appear when twisted up to discharge the ripe seed, are almost as ornamental as its flowers.

2.—*ERODIUM SEROTINUM*, Stev. THE LATE-FLOWERING HERON'S BILL.SYNONYMES.—*E. ruthenicum*, *Bieb.*; *E. multicaule*, *Link.*ENGRAVING.—*Swt. Brit. Flow. Gard.* 2d ser. t. 312.

SPECIFIC CHARACTER.—Tomentose. Stem diffuse. Leaves pinn-

atifid, incisely serrated. Segments lanceolate. Peduncles many-flowered; petals elliptic, equal in length to the sepals.

DESCRIPTION, &c.—A very showy species, growing to a considerable height, with numerous branched stems, and large umbels of dark purple flowers. The leaves are large and handsome. The species is not suitable for a small garden, but in a large one it forms a very showy plant of very easy culture, as it is quite hardy, and will grow in any soil or situation. It is a native of Siberia, and was introduced in 1821.

3.—*ERODIUM HYMENODES*, Willd. THE TERNATE-LEAVED HERON'S BILL.SYNONYMES.—*E. trilobatum*, *Jacq.*; *Geranium hymenodes*, *And.*; *G. trifolium*, *Cav.*; *G. gefolium*, *Dess.*ENGRAVINGS.—*Bot. Mag.* t. 1174; and our *fig. 8* in our Plate 30.

SPECIFIC CHARACTER.—Stem erect, branched, shrubby at the base;

branches clothed with long soft hairs. Peduncles many-flowered. Leaves somewhat three-lobed or three-parted, very blunt, deeply toothed. Stipules and bracteas scarious, ovate. Calyxes awnless (*G. Don.*)

DESCRIPTION, &c.—This species is valuable for producing a succession of blossoms the whole summer. It is a native of Mount Atlas, and was introduced in 1789. It will bear our winter, generally, in the open air, but it requires a little protection in case of severe frost. It is easily propagated by seeds or cuttings.

4.—*ERODIUM INCARNATUM*, L'Her. THE FLESH-COLOURED HERON'S BILL.SYNONYME.—*Geranium incarnatum*, *Cav.*ENGRAVINGS.—*Bot. Mag.* t. 261; and our *fig. 7* in Plate 30.

SPECIFIC CHARACTER.—Stem shrubby at the base. Leaves rough,

lower ones cordate, toothed, three-parted, ternate or five-lobed, with wedge-shaped three toothed lobes. Peduncles many-flowered.

DESCRIPTION, &c.—This species is a native of the Cape of Good Hope, introduced in 1787. Its flowers are very brilliant, but they are only produced in May and June. It requires the same treatment with regard to protection as the preceding species, but it is more impatient of wet.

## OTHER SPECIES OF ERODIUM.

*E. GUSSONI* *Ten. Bot. Mag.* t. 2445.

A native of Sicily, with rose-coloured or dingy purple flowers. Introduced in 1821.

*E. PETRAEUM*, Willd.

A native of the South of France on dry rocks. Introduced in 1640. The flowers are purple, and the plant not above three inches high.

*E. GLANDULOSUM*, Willd.

Another dwarf species from the Pyrenees, with pale violet flowers, streaked with purple. Introduced in 1798.

*E. CHRYSANTHUM*, Lin.

A very distinct species with yellow flowers. It is a native of Greece, on Mount Parnassus, and has not yet been introduced.

There are some other species, but the above are the most ornamental.

## CHAPTER XIII.

## TROPÆOLACEÆ.

**CHARACTER OF THE ORDER.**—Sepals five, the upper one with a long distinct spur. Petals five, unequal, irregular; the upper two sessile and remote, arising from the throat of the calyx, the lower three stalked and smaller, sometimes abortive. Stamens eight, perigynous, distinct. Anthers erect, two-celled. Ovary one, three-cornered, made up of three carpels. Style one. Stigmas three, acute. Ovules solitary, pendulous. Fruit indehiscent, separable into three pieces from a common axis. Seeds large, without albumen, filling the cavity in which they lie.

**DESCRIPTION, &c.**—This order is a very small one, containing only the genus *Tropæolum* and an annual plant called *Magallena porrifolium*, not yet introduced. The name of the order is taken from that of the principal genus. All the plants are natives of South America, and they have all tender, rather succulent stems, and peltate leaves, which are sometimes entire and sometimes lobed, or five or seven-parted. The flowers are generally single, and always so in the tuberous-rooted species.

## GENUS I.

TROPÆOLUM, *Lin.* THE NASTURTIUM, OR INDIAN CRESS.

*Lin. Syst.* OCTANDRIA MONOGYNIA.

**GENERIC CHARACTER.**—Calyx five-parted, upper lobe furnished with a spur. Petals five, the lower three much smaller than the others, and sometimes wanting. Stamens eight, free from the base.

**DESCRIPTION, &c.**—This genus was formerly thought to contain only the common annual species and their double varieties, two hybrids from *T. magus*, and three or four tuberous-rooted species which were kept in the stove or greenhouse. The discoveries of the last three or four years have, however, greatly enriched this genus, which now boasts some of our most beautiful flowers. It is said that the annual kinds may be almost considered as perennials, as they may, with care, be preserved during winter in a greenhouse, but all the true perennials have tuberous roots. The name of *Tropæolum* is taken from the Latin word *tropæum*, a trophy; the round peltate leaf of the common species being supposed to represent a buckler, and the flower a helmet.

1.—TROPÆOLUM TUBEROSUM, *Ruiz et Pavon.* THE TUBEROUS INDIAN CRESS.

**ENGRAVINGS.**—Bot. Mag. t. 3714; Paxt. Mag. of Bot. vol. v. p. 49; and our fig. 2 in Plate 31. **SPECIFIC CHARACTER.**—Leaves peltate-nerved, five-lobed, transversely-truncate at the base, smooth. Petals almost the length of the calyx. (*G. Don.*)

**DESCRIPTION, &c.**—The flowers of this species are decidedly two-coloured, red and yellow; and very handsome. The leaves are decidedly five-lobed, and truncate at the base. The tubers are eatable, and bear considerable resemblance to those of a Jerusalem artichoke. The stalks and leaves may be also eaten, and are slightly acrid like cress. The flowers are very handsome, but they are seldom produced in the open air; as, unless forced, they do not appear till the latter end of October or November, before which time the stems are generally killed, as they are so succulent as to be destroyed by a very slight frost. When it is wished to have the plant flower, the tubers should be planted in pots, and brought forward in a hotbed or stove till May, and then planted out into a warm border with a southern exposure, and the plant trained against a wall. When the plant is grown only for culinary purposes, the tubers should be planted at once in the open ground, where they will grow most luxuriantly, producing an immense mass of leaves and stems in a very short time; but from their

coarse habit of growth when thus treated, they are far from ornamental. The plant when grown in pots, on the contrary, is of a delicate habit of growth, and its stems, which become long and slender instead of being thick and bushy, require support. When it can be thrown into flower, it is highly ornamental. When kept in a greenhouse, these plants rarely flower at all, as they require abundance of light and free air. The species is said to have been introduced in 1827; but if so, it was soon lost, and was not re-introduced till 1835. It is a native of Peru, where it was found growing among broken rocks.

## 2.—*TROPAEOLUM BRACHYCERAS*, *Hook.*

### THE SHORT-HORNED INDIAN CRESS.

**SYNONYME.**—*T. tenellum*, *G. Don*.

**ENGRAVINGS.**—Bot. Mag. t. 3851; Bot. Reg. t. 1926; Paxt. Mag. of Bot. vol. iv. p. 55; Sweet's Brit. Flow. Gard. 2d ser. t. 370; and our *fig. 3* in Plate 31.

**DESCRIPTION, &c.**—This is a very elegant plant with yellow flowers, and a very slender stem, which requires support. It is a native of Chili, and is found in great abundance in the neighbourhood of Valparaiso, where it is called *Flor de Perdiz* (Partridge flower). It was first introduced in 1828, but appears to have been lost, or "at least," as Dr. Lindley observes, "it was never brought into notice till" about 1835 or 1837, when tubers of it were sent to various persons from Valparaiso. The culture it requires is exactly the same as that of *T. tricolorum*, which will be given in detail.

## TRICOLORUM, *Swt.* THE THREE-COLOURED INDIAN CRESS.

**ENGRAVINGS.**—*Swt.* Brit. Flow. Gard. t. 270; Bot. Mag. t. 3169; Bot. Reg. t. 1935; Paxt. Mag. of Bot. vol. ii. p. 123; and our *fig. 4* in Plate 31.

**SPECIFIC CHARACTER.**—Root tuberous; stem slender, climbing,

branched; leaves peltately divided; segments six or seven, obovate, entire, cuspidate. Petioles earlose. Petals unguiculate, a little longer than the rather closed permanent calyx, obtuse, quite entire.

(*G. Don.*)

**DESCRIPTION, &c.**—This very beautiful species has three distinct colours in the flowers. The leaves resemble those of *T. brachyceras*, and the stems are nearly equally slender. It is a very elegant climber; and when it is ten or eleven feet high, and trained round a frame, it produces a very beautiful effect. It is generally planted in pots and kept in a greenhouse, but it will grow vigorously, and produce a great abundance of flowers, in the open air. The tubers are flat and roundish, like those of the Cyclamen, and they should be laid on the surface of the soil, instead of being planted in it. If, however, the tuber be exposed to the violent action of the light, the plants will neither be healthy nor flower abundantly the first year; though the bulbs from becoming stronger will produce more and better flowers the following season. When kept in pots, they do not require much room; but, as the plants have very slender fibrous roots, which are easily withered by drought, it is a good plan to put the pot containing the *Tropaeolum* into another pot a good deal larger, filling up the interstices between the two with sand or moss, which should be kept constantly wet. This imparts coolness and moisture to the pot within, without running any risk of rotting or injuring the roots, by keeping them in water. When grown in the open ground, the tuber should be planted in a sandy soil, and the stems should be trained over a trellis, as they are too slender to look well nailed against a wall. This species is a native of Chili, and it was introduced so long back as 1828; but for some time after its introduction, it was such a weak feeble plant as to appear scarcely worth growing. The tubers being buried in the earth became sodden with wet, and consequently soft and rotten; and thus, many plants died off without any sufficient cause being discernible, while those that remained alive became yellow and faded. It may be increased by seeds or cuttings, or offsets like other tubers.

4.—TROPÆOLUM AZUREUM, *Miers.* THE BLUE TROPÆOLUM.

**SPECIFIC CHARACTER.**—Leaves five-parted; segments linear, nearly equal. Petals five, intensely blue, longer than the calyx. Spur conical, shorter than the sepals.

**DESCRIPTION, &c.**—This is a most beautiful species with the stem, leaves, and habit of *T. brachyceras*, but flowers of a brilliant and intense blue. A specimen imported from Chili in 1841, was exhibited in flower by Messrs. Veitch and Son of Exeter, at the rooms of the Horticultural Society in Regent Street, October 4, 1842, being the first ever seen in blossom in England. The flowers are larger than those of *T. brachyceras*, but of nearly the same form; and the blue is deepest at the margin of the petals, becoming paler in the centre. The whole appearance of the plant is particularly light and elegant, from the delicacy of the foliage, and the great abundance of the flowers; as yet it has been only grown in a pot, but it will probably prove quite as hardy as the other species.

5.—TROPÆOLUM PENTAPHYLLUM, *Lam.* THE FIVE-LEAVED TROPÆOLUM, OR INDIAN CRESS.

**SYNONYMES.**—*T. quinatum*, *Helle.*; *Chymocarpus pentaphyllus*, *D. Don.*

**ENGRAVINGS.**—Bot. Mag. t. 3190; Bot. Reg. t. 1547; Swt. Brit. Flow. Gard. 2d ser. t. 215; and our *fig.* 6 in Plate 31.

**SPECIFIC CHARACTER.**—Stem climbing. Root tuberous. Leaves with long petioles, five-parted. Flowers axillary, solitary, on long peduncles. Calyx persistent. Spur long, clavate at the extremity. Petals two, very small. Fruit a pulpy berry.

**DESCRIPTION, &c.**—This species differs so much from all the others, that the late Professor Don made it a distinct genus. The principal point of difference is, however, in the fruit, which is a juicy berry resembling, in appearance and taste, a black Zante grape. Other points of difference are in the petals, of which there are only two, instead of five; and in the calyx, which is valvate in the bud, and remains on till the fruit is ripe. It is a native of Buenos Ayres, and was first introduced in 1824; but being soon lost, it was re-introduced in 1830. It requires the same treatment as *T. tricolorum*, but as it grows much more vigorously in the open air than in a greenhouse, it is better adapted for a border plant. It should be grown in a compost of sandy peat and loam; and it is propagated by seeds, which it ripens freely, or by cuttings which must be struck in sand, with the pot plunged in a hotbed. The name of Chymocarpus is derived from *Chymo*, juicy; and *carpus*, a fruit.

6.—TROPÆOLUM MORITZIANUM, *Klotzsch.* MR. MORITZ'S TROPÆOLUM.

**ENGRAVINGS.**—Bot. Mag. t. 3841; Paxt. Mag. of Bot. vol. viii. p. 199; and our *fig.* 1, in Plate 31.

**SPECIFIC CHARACTER.**—Leaves peltate, slightly 7—9-lobed, truncate at the base. Petals longer than the calyx, veined, and fringed at the margin with red. Spur long.

**DESCRIPTION, &c.**—This very remarkable species of Tropæolum was introduced in 1840 from Cumana in the West Indies; but though a native of so warm a climate, the plant grows vigorously in the open air in England, though as yet it has only flowered in a greenhouse. The root is tuberous, the stems are long, twining, and of a purplish tinge, and the leaves are nearly as round as those of the common annual species in the upper half of the leaf, but nearly straight in the lower part near the stalk. The plant is most nearly allied to *T. tuberosum*, and is rather shy in producing its flowers. Some have supposed it to be the same as *T. bicolor* described by Ruiz and Pavon. It is generally grown in peat and loam.

6.—TROPÆOLUM JARRATTII, *Paxt.* MR. JARRATT'S TROPÆOLUM.

**ENGRAVINGS.**—Paxt. Mag. of Bot. vol. v. p. 29; and our *fig.* 5 in Plate 31.

**SPECIFIC CHARACTER.**—Stem climbing, slender. Leaves cut into six or seven segments. Petioles and peduncles cirrhose.

**DESCRIPTION, &c.**—The flowers of this species strongly resemble those of *T. tricolorum*, but the plant is of









a much more vigorous habit of growth. It appears indeed far more hardy than any other species, and grows vigorously in the open air. It flowers so freely, that before a newly planted tuber had made a shoot 12 inches long, it was covered with flower-buds, which soon opened into flowers. It is a native of Santiago, whence it was imported in 1836. It should be treated like *T. tricolorum*, and "grows in a 16 sized pot in equal parts of loam and peat." "It may be propagated by cuttings, placed in sand and placed in heat under a glass."

*Paxt.*

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#### 7.—TROPAEOLUM EDULE, *Lindl.* THE EATABLE TROPAEOLUM.

ENGRAVINGS.—*Paxt. Mag. of Bot.* vol. ix. p. 128.

SPECIFIC CHARACTER.—Root tuberous. Leaves deeply cut into six or seven linear-lanceolate segments. Spur moderately long, not clavate, curved. Stamens inclining upwards.

DESCRIPTION, &c.—The description given by Dr. Lindley in the *Botanical Register* a year or two ago, of a blue *Tropaeolum*, excited a strong desire in all collectors of flowers to possess it, and great numbers of tubers were imported from South America, in hopes that among them might be the much desired plant. Many of these tubers flowered in the spring and summer of 1842, and though Messrs. Veitch and Son, of Exeter, were the only persons so fortunate as to obtain the *Tropaeolum* with blue flowers, other valuable species have been discovered, one of which has been figured by Paxton, and proves to be *T. edule*. The flower-buds of this species are of a deep rich green, which colour is retained by the segments of the calyx; the spur of the flower and the petals are of a brilliant orange or golden yellow. The leaves are very glaucous, and they are divided into long narrow segments. The tubers are large and eatable, and the species would be a valuable one, as the flowers are very brilliant, were it not for the great length of the stems, in proportion to the leaves and flowers, which are placed widely apart. To prevent the bare appearance of the stems, the plant should be trained over a flat trellis, which should be covered as closely as possible. The leaves are apt to turn yellow, and the stems to wither and damp off, if the plant be not regularly watered, or if the tuber be exposed to the light. On this account it is desirable to have the tuber covered with moss, as well as to attend carefully to the watering. The species is a native of Chili, whence it was introduced in 1841.

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#### OTHER SPECIES OF TROPAEOLUM.

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Several other species are mentioned in books, but the most interesting appears to be *T. polyphyllum*, which probably is in the country, though it has not yet flowered.

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#### CHAPTER XIV.

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#### OXYALIDEÆ.

CHARACTER OF THE ORDER.—Calyx five-parted, permanent, equal. Petals five, equal, unguiculate, spirally twisted in aestivation. Stamens five, filaments awl-shaped, erect, usually monadelphous at the base. Ovary free, five angled, five celled. Capsule bursting lengthwise at the angles. Seeds few, enclosed in a fleshy oval when young, but bursting from the apex with elasticity when ripe. Albumen cartilaginous-fleshy.

DESCRIPTION, &c.—There are four genera in this order; but they are nearly all stove plants, with the exception of those included in the genus *Oxalis*.

## GENUS I.

OXALIS, *Lin.* THE WOOD SORREL.*Lin. Syst.* DECANDRIA PENTAGYNYIA.

**GENERIC CHARACTER.**—Sepals five, free, or connected at the base. Stamens monadelphous at the base. Stigmas pencil-formed, rarely capitate or bifid. Capsule oblong or cylindrical. (*G. Don*).

**DESCRIPTION, &c.**—The genus *Oxalis* comprises a great number of species; some of which are shrubby and some herbaceous, many having tuberous roots, but some being annual, and some stove shrubs, while others are the inhabitants of the greenhouse, or quite hardy. The flowers are always handsome in their form, from the regularity of their five unguiculate equal petals, and their colours are generally brilliant. The leaves vary considerably, but they are most commonly trifoliate, and slightly acid. The tubers are frequently eatable, and resemble in taste those of a Jerusalem artichoke. All the species grow best in a mixture of sand, peat, and loam, and they require regular watering, as they are easily killed by suffering the roots to become too dry.

1.—OXALIS CRENATA, *Jacq.* THE SCALLOPED WOOD SORREL.

**ENGRAVINGS.**—Swt. 2d ser. t. 125; and our fig. 2 in Plate 32. | date, downy. Peduncles umbelliferous, five or six flowered, longer than the leaves. Petals crenated. Root tuberous.

**SPECIFIC CHARACTER.**—Stem erect. Leaves ternate, leaflets obovate,

**DESCRIPTION, &c.**—This plant is well known from so much having been said of it a few years ago as a substitute for the potato. Its tubers are eatable, but they are soft and watery, resembling a Jerusalem artichoke much more than a potato. The leaves are slightly acid, and have been recommended as a substitute for rhubarb in tarts, and for sorrel in fricandeaus and other made dishes; the best way of using them is, however, in salads. The flowers of *O. crenata* are very handsome, but they are seldom produced. The stems die down to the ground on the first attack of frost, and the fibrous roots which unite the tubers wither, so that the plant may be called an annual, though it is not more so than the potato. It is propagated either by cuttings or tubers, for it rarely ripens its seeds in this country; and it will grow in any common garden soil. If, however, the soil be too rich, it will produce little else than leaves and stems, and if too poor it will not thrive; in fact, the culture depends partly on the use to which the plant is to be applied. If the tubers are required, it should be propagated by them, and the shoots pegged down in light rich soil, to induce them to throw out roots; but if the flowers are considered the principal object, the plants should be raised from cuttings, when, generally, they will only form fibrous roots, and consequently will be strong enough to produce flowers, which will appear in July, and continue nearly all the summer. It is a plant that will not bear cutting in, if it is intended to produce flowers, as that treatment makes it produce only a mass of stems and leaves. It perhaps flowers best in pots or boxes, where it can be grown in good soil without having too much room allowed for its roots. Though its stems and leaves are killed by frost, its tubers are quite hardy, and even have been known to vegetate after having been exposed to frost when out of the ground. The species is a native of Peru, and was introduced in 1829.

2.—OXALIS STRICTA, *Lin.* THE ERECT OXALIS.

**SYNONYME.**—*O. ambigua*, *Sal.*

Petals entire. Styles about the length of the inner stamens.

**SPECIFIC CHARACTER.**—Stem erect, leafy. Peduncles umbelliferous, | (*G. Don*)  
2—6-flowered, rather shorter than the leaves; leaflets obovate.

**DESCRIPTION, &c.**—This species is a native of North America from Pennsylvania to Carolina, and it is said

to be found wild also in Jamaica. It is of low growth with a creeping root, so that it soon covers a patch of earth with its leaves and small yellow flowers. It was formerly used in medicine in inflammatory cases; and it was introduced into England so far back as 1658, though it is now seldom seen in gardens.

### 3.—OXALIS ROSEA. THE ROSE-COLOURED OXALIS.

**SYNONYMS.**—*O. floribunda*, *Lindl.* in *Bot. Reg.*; *O. racemosa*, *Lam.*

**ENGRAVINGS.**—*Bot. Mag.* t. 2415; *Bot. Reg.* t. 1123.

**SPECIFIC CHARACTER.**—Stem erect, branching. Peduncles very long. Flowers somewhat umbellate, and before expansion nodding. Leaflets obovate, sessile.

**DESCRIPTION, &c.**—This very beautiful little plant only wants larger flowers to make it extremely desirable for gardens. It is a native of Chili, whence it was introduced in 1823; and it begins to flower in March or April, continuing to produce a succession of blossoms all the summer. It is a very desirable plant for a small garden, but it is not so well suited for a large one, as it requires a good deal of care and attention; as, for example, it should have a slight protection during severe frosts, and should be watered regularly when growing.

### 4.—OXALIS FLORIBUNDA, *Lehm.* THE MANY-FLOWERED OXALIS.

**ENGRAVINGS.**—*Swt. Brit. Flow. Gard.* 2d ser. t. 54.

**SPECIFIC CHARACTER.**—Stem short, and somewhat fleshy. Leaves numerous, verticillate, on long hairy petioles; leaflets obovate, ferru-

ginously-villoso. Peduncles many-flowered, elongated, three times as long as the leaves; calyx and corolla covered with silky hairs. Style twice as long as the stamens.

**DESCRIPTION, &c.**—This very beautiful species has large rose-coloured flowers, which are produced in great abundance the whole summer. The stem is so small as to be scarcely perceptible; but the footstalks of the flowers are so long, and rise so much above the leaves, as to prevent the want of a stalk being noticed. The flowers are of a brilliant dark crimson, and they are produced in such abundance, and continue so long in beauty, fresh flowers opening as fast as any decay, as to render the plant one of great value in a garden. The root is tuberous, solid, and jointed, and it should be planted in a warm border, in a mixture of turf-loam not broken small, sand, and charcoal. It requires plenty of light and air, and in favourable situations it will continue in blossom from May to October. It is a native of Brazil, whence it was introduced in 1829.

### 5.—OXALIS LYONI, *Pursh.* MR. LYON'S OXALIS.

**SPECIFIC CHARACTER.**—The whole plant clothed with silken villi. Stem branched, decumbent; peduncles two or three flowered, longer than the petioles; leaflets obovately two-lobed; petals wedge-shaped; capsules downy, twice the length of the lanceolate calyx. (*G. Don.*)

**DESCRIPTION, &c.**—This species is a native of North America, being found wild on Cumberland Island, Georgia. It is a decumbent plant, with yellow flowers, which are produced in June and July, and it was introduced in 1816. It is rarely seen in collections; but it would be worth growing if it could be obtained, as it is quite hardy, and the colour of its flowers would contrast agreeably with the deep rose-colour of most of the species.

### 6.—OXALIS DEPPEI, *Lodd.* MR. DEPPE'S OXALIS.

**ENGRAVINGS.**—*Bot. Cab.* t. 1500; *Swt. Brit. Flow. Gard.* 2d ser. t. 96.

Umbels many-flowered; scape and peduncles loosely-pilose; styles intermediate, villous; stamens unequal, alternate ones each with an appendage. (*G. Don.*)

**SPECIFIC CHARACTER.**—Stemless. Leaflets four, large, obovate, pilose, glaucous beneath, on short petioles; petioles densely pilose.

**DESCRIPTION, &c.**—This species, which is now rapidly becoming popular, has crimson flowers nearly as large as those of *Oxalis Bowiei*; and leaves divided into four large, and generally drooping, leaflets, each of which is marked across the middle by a deep brown or blackish band, which forms a ring extending through all the

leaflets, as in the leaves of the common clover. The leaflets are of a thick fleshy succulent texture, and being consequently very heavy, they generally droop ; and thus each leaf, at a little distance, looks something like a butterfly. There is no green stem ; but the leaves spring from a kind of bulb, enveloped in a mass of chaffy scales, so as to look like the scaly bulb of a small lily ; from this bulb the plant sends down one or more strong fusiform roots, usually about four inches long and one inch in thickness, which are good to eat. To prepare them, they are washed and picked, and then simmered in water, with a little salt in it. When tender, they are served with melted butter and toast like asparagus, or with white sauce like scorzonera, and in taste greatly resemble that vegetable. The leaves are used as a substitute for sorrel and in salad ; and the flowers are put into salads, not only for their taste, which is agreeably acid, but that their brilliant crimson may relieve the mass of green. The plant flowers freely ; and, from its neat, compact growth, it is sometimes used for garden edgings. It is propagated by little scaly bulbs or offsets, which form by the side of the larger bulb, and round the collar of the plant. These bulbs should be pulled off when the fusiform roots are taken up in October for use, and kept dry and secure from frost in sand till April, when they should be planted in a very sandy soil enriched with vegetable mould, in drills two inches deep and seven inches apart, and the bulbs five inches apart. As the bulbs, however, are generally very small, two or three may be planted together, keeping the tufts thus formed five inches apart. The young plants should be regularly watered if the weather be very dry ; and some gardeners water them with liquid manure (from cow-dung) just before they form their flower-buds. If grown in a light rich soil, and never suffered to become too dry, these plants will remain in flower from the latter end of May till October. In most parts of England they may be left in the ground all the year without protection, when the fusiform roots are not taken up as an article of food ; but in cold situations, or in long severe frosts without snow, the plants should have a mat thrown over them. The tubers, when taken up, may be kept like potatoes. *O. Deppei* is a native of Mexico, whence it was introduced in 1827 ; but it was very little noticed till about 1840, when some papers respecting it, which had appeared in the German horticultural works, were translated and republished in England. Its uses and mode of culture are, however, given in an account of the Botanic Garden at Berlin, published in the *Gardener's Magazine* for 1836, p. 302. The specific name of Deppei is from Mr. Deppe, a German naturalist, who first discovered the plant in Mexico.

#### 7.—OXALIS BOWIEI, Att. MR. BOWIE'S OXALIS.

ENGRAVINGS.—Bot. Reg. t. 1585 ; Lodd. Bot. Cab. t. 1782 ; and our fig. 1 in Plate 32.

SPECIFIC CHARACTER.—Stemless. Leaflets three, roundish, cordate, emarginate. Peduncles about the length of the leaves, umbelliferous.

DESCRIPTION, &c.—This is decidedly the handsomest of all the species. The flowers are large, and of a most brilliant rose colour ; they are also produced in such abundance as to have a most brilliant effect in the flower-garden. During a visit to Devonshire in September 1842, I frequently saw large tufts of this beautiful species in the borders of the flower-gardens, and it is impossible to describe the splendid effect they produced. When planted in the open ground, the plants flower in September and October ; but by potting them and keeping them quite dry so as to allow them about a fortnight's rest at Midsummer, or later, and then placing them in a stove, to start them, as the gardeners call it, the plants may be made to flower freely, and at any season required, according to the time when they are given their period of rest. When the flower-beds are once formed, they may be removed to a cooler temperature to flower. This beautiful species is a native of the Cape of Good Hope, whence it was introduced in 1824 ; and it and the following species are the only Cape kinds of Oxalis that will flower in the open air.









## 8.—OXALIS VARIABILIS, Dec. THE VARIABLE OXALIS.

**SYNONYMS.**—*O. grandiflora*, *Willd.*; *O. loxala*, *Jacq.*; *O. brevis-*  
*carpa*, *Spreng.*; *O. rigidula*, *Jacq.*; *O. suggillata*, *Jacq.*

**VARIETY.**—*O. v. β floribus rubris*, *Lindl.*; *O. variabilis*, *Jacq.*; *O. purpurea*, *Willd.*; *O. speciosa*, *Spreng.*

**DESCRIPTION, &c.**—There are two very distinct varieties of this species; one with white flowers, and the other with the flowers pinkish. Both are natives of the Cape of Good Hope, whence they were introduced in 1795. Besides these distinct kinds, the species varies so very much as to have received a great many names from botanists, as is proved by the numerous synomyms. These kinds should be planted in a warm sunny border, and kept dry for a period when they have done flowering. They should also be protected from frost.

## OTHER SPECIES OF OXALIS.

O. TETRAPHYLLA, *Lodd. Bot. Cab.* t. 790.

This species has purple flowers, but in other respects it closely resembles *O. Deppei*. It is a native of Mexico, whence it was introduced in 1822.

O. CARNOSA, *Molina*.

A half-hardy species, with very fleshy leaves, and small yellow flowers. A native of Chili; introduced in 1825.

O. FULGIDA, *Lindl.*

A dwarf plant, a native of the Cape of Good Hope; introduced in 1822, and remarkable for the smallness of its leaves, which resemble those of a heath, and the brilliant rose colour of its flowers.

O. VIOLACEA, *Jacq.*

A hardy species, with a bulbous root; introduced in 1772. The flowers are violet-coloured.

O. DIVERGENS, *Lindl.*

A very handsome Mexican species, with white flowers, which resemble those of *Anemone vitifolia* in their texture and brilliant whiteness. The plant grows best in the open ground, but it requires a slight protection against frost in the climate of London. It was introduced about 1830. It is well deserving of cultivation, both for its beauty and the great length of time it continues in flower, viz. from June to September.

O. LOBATA, *Sims. Bot. Mag.* t. 2386.

A tuberous-rooted plant, presenting the same singular appearance as *O. Deppei*, of fusiform tubers like those of the Dahlia, growing out of a scaly bulb. The whole plant is small, and the flowers yellow. It is a native of Chili, introduced in 1821.

O. ALBA, *D. Don, Syst. Brit. Flow. Gard.* 2d ser. t. 398.

This species has a smooth bulb, with fusiform roots proceeding from it. The flowers are white, and resemble those of *O. divergens*. It was sent to Edinburgh in May 1838 from Haarlem, but its native country is not known.

## CHAPTER XV.

## ZYGOHYLLEÆ.

**CHARACTER OF THE ORDER.**—Calyx of five distinct sepals, or hardly connected at the base. Petals five, alternating with the sepals, and inserted in the receptacle. Stamens ten, distinct, hypogynous, five opposite the petals, and five opposite the sepals. Ovary 1—5-celled. Styles five, joined into one, but sometimes they are distinct at the top. Carpels five, constantly more or less adnate to each other, and to the central axis; cells opening at the upper angle, usually many-seeded, sometimes one-seeded. (*G. Don.*)

**DESCRIPTION, &c.**—The type of this order is the Bean Caper, *Zygophyllum Fabago*, a plant with small red flowers, by no means ornamental. The order is distinguished from Oxalidæ by the styles being joined in one, and the seeds having no axil. The leaves are also generally compound, and furnished with two stipules at the base of the petioles. There are very few ornamental plants in the order, and almost the only showy plant belonging to it which will flower in the open air is *Melianthus major*.

## GENUS I.

MELIANTHUS, *Lin.* THE HONEY-FLOWER.

*Lin. Syst.* TETRANDRIA MONOGYNIA.

**GENERIC CHARACTER.**—Calyx five-cleft, unequal; lower segment drawn out into a hollow gibbosity. Petals five. Stamens four, two of which are connate. Style one, crowned by a four-cleft stigma. Capsule four-lobed, four-celled; cells one-seeded from abortion. (*G. Don.*)

**DESCRIPTION, &c.**—There are three species in the genus, only one of which will, however, flower in the open air. The name *Melianthus* is composed of two Greek words, signifying literally Honey-flower; and it alludes to a hollow projection in the flower, which is filled with a sweet liquid, tasting like honey. The flowers have a coloured calyx, which forms their showy part, the petals being seldom seen. The leaves are very large and glaucous, and they have an unpleasant smell when bruised. The stems are suffruticose, and those of the greenhouse kinds are decidedly shrubby.

1.—MELIANTHUS MAJOR, *Lin.* THE LARGER HONEY-FLOWER.

**SYNONYMES.**—*M. africanus*, *Herm.*, Sicilian, or Sea Ragwort.

**ENGRAVINGS.**—Bot. Reg. t. 45; and our fig. 3 in Plate 33.

**SPECIFIC CHARACTER.**—Leaves smooth on both surfaces, glaucous.

Stipules large, joined to the petioles. (*G. Don.*)

**DESCRIPTION, &c.**—This plant, though called suffruticose, is properly a perennial, as the slight woodiness which it sometimes shows near the base is only found in old plants; and a stem ten feet high will be often entirely hollow and herbaceous. It is very handsome, even when it does not flower, from its large, glaucous, pinnate leaves, which have broad stipules sheathing the petiole. The flowers are also very handsome, though the showy part is only the calyx. The species is a native of the Cape of Good Hope, whence it was sent to Holland in 1673; and it was brought to England from that country in 1688, by Mr. Bentinck, afterwards Lord Portland. The leaves have a very unpleasant smell when bruised; and the flowers, when shaken, give out a sweet glutinous liquid, which is highly prized by the natives at the Cape. It is even said that when one of these plants is descried in flower, the natives will run to it, eagerly striving which shall be first to secure the delicious liquor for himself. The plant in England is frequently kept in a greenhouse; but it seldom flowers except in the open ground, though it is somewhat tender. The best way, therefore, of treating it is to plant it in the open ground, in face of a south wall, and to cover the shoots during winter, as it will not flower if the









tips of the shoots are killed. Miller also advises it to be planted in dry rubbish, that it may shoot less vigorously, and be consequently less succulent, and less liable to be injured by frost. "For if the stalk is killed at the top, though it sprouts again, it will not flower the same season." It is increased by suckers, taken off between March and September; and in favourable summers it ripens seed.

## CHAPTER XVI.

### RUTACEÆ.

**CHARACTER OF THE ORDER.**—Flowers of all hermaphrodite. Calyx with 4—5, rarely 3 divisions, toothed, cleft or parted. Petals equal in number to the divisions of the calyx, and alternating with them, usually distinct and longer than the calyx. Stamens sometimes equal in number with the petals, and alternating with them; sometimes double that number, with the alternate ones shortest: sometimes these last are abortive, and of a different figure from the others. Filaments inserted in the gynophore, rarely beneath the hypogynous disk, and more rarely perigynous, or adhering to the bottom of the calyx, in consequence of the disk being joined with it; they are either naked or furnished with a scale at the base, free, very rarely connected at the base, or glued to the corolla, as in those with monopetalous flowers. Anthers two-celled, bursting lengthwise. Ovary free, with the cells equal in number to the petals and opposite them, rarely fewer, verticillate; sometimes fixed around the common axis, sometimes distinct to the base, sometimes joined together. Ovule fixed to the central pla-

centa, usually two in each cell or carpel, rarely one or 4—20. Styles equal in number to the cells or carpels, usually connected together in one, or only connected at the base or top, rarely wholly distinct. Stigma of as many lobes or furrows as there are styles in those that are joined. Fruit sometimes simple, having as many valves as there are styles, with a dissipation in the middle of each valve; dehiscent, but more usually with an equal number of two-valved, separable carpels, rarely indehiscent, composed of many drupes or carpels. Sarco-carp thin, or more or less fleshy. Endocarp thin, or woody, closely adhering to the sarcocarp, or separable from it into a two-valved, elastic coeculum. Seeds fewer than the ovula, from abortion, with a membranous, or usually with a testaceous covering. Albumen fleshy, or cartilaginous horny, rarely wanting. Embryo white or greenish, with a straight radicle pointing towards the top of the cells, rarely turned obliquely towards the pylum. Cotyledons of various forms.

**DESCRIPTION, &c.**—The plants belonging to the order Rutaceæ are rarely ornamental, except in the genus *Dictamnus*. I have, however, given one species of *Aplophyllum*, as it is very showy in shrubberies or broad borders, where a mass of yellow flowers is required. The plant which gives its name to the order is the common one of the gardens (*Ruta graveolens*), a well-known, strong-smelling shrub, with bluish green leaves, and yellow flowers.

### GENUS I.

#### DICTAMNUS, *Lin.* THE FRAXINELLA.

*Lin. Syst.* DECANDRIA MONOGYNIA.

**GENERIC CHARACTER.**—Calyx five-parted, unequal. Petals unequal. Stamens ten, declinate. Style one. Capsule subtriangular, composed of five two-seeded carpels. (*G. Don.*)

**DESCRIPTION, &c.**—The two species composing this genus are well-known showy border-flowers. The origin of the name *Dictamnus* is not known; but that of *Fraxinella* signifies "little-ash," in allusion to the pinnate leaves.

#### 1.—DICTAMNUS FRAXINELLA, *Pers.* THE COMMON FRAXINELLA.

**SYNONYMS.**—*D. albus*, *Lin.*; *D. rubra*, *Link*; *False Dittany*, *Gerard*; *White Dittany*, *Parkinson*.

**VARIETIES.**—There are two kinds, one with white flowers, and one

with purple flowers; but they will frequently come up in the same bed when raised from seed.

**SPECIFIC CHARACTER.**—Leaflets 4—5 pairs, cordate at the base, acute at the apex, finely serrulated; racemes long; calyx unequal.

**DESCRIPTION, &c.**—This plant is a very interesting one, from the discovery made by the daughter of Linnaeus respecting it. The plant exhales a kind of gaseous vapour; and this lady happening to set a candle

near a plant of Fraxinella, observed the gas exuding from it to take fire, and burn like a halo round the plant. This experiment can only, however, succeed in fine warm, dry weather. The plant when bruised, particularly the petioles, smells like lemon-peel, and has a rich balsamic fragrance. The root was formerly used in medicine. Both the species and variety are natives of Germany and other parts of Europe, and were introduced before 1596. They will grow in any common garden soil, and are increased by seeds or division.

## 2.—DICTAMNUS ANGUSTIFOLIA, *Swt.* THE NARROW-LEAVED FRAXINELLA.

ENGRAVINGS.—*Swt.* Brit. Fl. Gard. 2d ser. t. 93; and our  | SPECIFIC CHARACTER.—Leaflets 4—5 pairs, alternate, ovate-lanceolate, acuminate, finely serrulated; racemes long; calyx nearly equal. *fig. 1* in Plate 33.

DESCRIPTION, &c.—This species has numerous stems rising from the same root, which are not so stiff as those of the common species, and are consequently more graceful. The flowers are also larger and more delicately marked; and the leaflets are much larger, serrulated with numerous short teeth, and dotted with a great number of little dots, which are smooth and glossy on the under side. The lower side is also covered with soft weak hairs, particularly on the nerves. The species is a native of Siberia, whence it was introduced in 1821; and it requires the same culture as the common Fraxinella. It also agrees with that plant in its lemon-like smell, and in emitting a gas which will take fire by applying a light to it, and which will burn round the plant for a long time without injuring it. The root is medicinal.

## GENUS II.

### APLOPHYLLUM, *Juss.* THE ENTIRE-LEAVED RUE.

*Lm. Syst.* DECANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-parted. Stamens ten. Styles five, connected. Capsule five-lobed, five-celled. (*G. Don.*)

DESCRIPTION, &c.—The plants belonging to this genus differ from those included in the genus *Ruta*, in having entire leaves, instead of pinnate ones. There are several species, all natives of Europe and Asia, but only four or five of them have been introduced. The name *Aplophyllum* signifies simple-leaved.

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### 1.—APLOPHYLLUM SUAVEOLENS, *G. Don.* THE SWEET-SCENTED RUE.

SYNONYMS.—*Ruta suaveolens*, *Dec.*; *R. linifolia*, *Bieb.*; *R. l.* | SPECIFIC CHARACTER.—Leaves entire, spatulately-lanceolate, glaucous, smoothish; calyxes a little fringed; ovaries quite smooth; petals ovate.

ENGRAVINGS.—*Bot. Mag.* t. 2254; and our *fig. 2* in Plate 33.

DESCRIPTION, &c.—A very showy plant, with large clusters of yellow flowers, which have the scent of the cowslip. There is a variety, the flowers of which are lemon-scented. The species is a native of Asiatic Russia, and the variety is found in Greece. They are both quite hardy, and only require planting in the open garden. They are propagated by division of the root. They flower all the summer, from June to September. The species was introduced in 1800.

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### OTHER SPECIES OF APLOPHYLLUM.

A. PUBESCENS, *G. Don.*; RUTA PUBESCENS, *Willd.*; R. PATAVINA, *Poir.*

A native of Spain; introduced in 1816. Flowers yellow.

**A. VILLOSUM, G. Don ; RUTA VILLOSA, Bieb. ; R. PARVIFLORA, Desf.**

Flowers small, racemose. A native of Mount Caucasus; introduced in 1818.

**A. LINIFOLIUM, G. Don ; RUTA LINIFOLIA, Lin., Andr. Bot. Rep. t. 565.**

A showy species with corymbose yellow flowers. A native of Spain and other parts of Europe; introduced in 1752.

**A. DAHURICUM, G. Don ; RUTA DAHURICA, Dec. ; PEGANUM DAHURICUM s. Lin.**

Flowers pale yellow or white. Introduced in 1816.

## CHAPTER XVII.

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### LEGUMINOSÆ.

**CHARACTER OF THE ORDER.**—Calyx five-cleft, or five-toothed, or bilabiate. Petals usually five, rarely fewer, papilionaceous, or unequal, seldom nearly equal, imbricate in aestivation, inserted in the bottom of the calyx, rarely in the torus. Stamens inserted with the petals, and generally twice their number, monadelphous or diadel-

phous. Ovarium free, usually stipitate. Segments generally two-valved, one-celled, or transversely many-celled. Seeds fixed to the upper suture of the legume by funnels. Albumen none. Leaves usually alternate, variable, bistipulate. Flowers of various hues.

**DESCRIPTION, &c.**—Perhaps no order is more popular than this. The plants belonging to it are extremely numerous, and are divided into three kinds with regard to their flowers, though they all agree in their fruit being leguminous; that is, consisting of a seed or many seeds, each of which has a little footstalk by which it is attached to the upper part of a seed-case or pod. Some of these seeds open, when they begin to grow, into two fleshy seed-leaves, or cotyledons as they are called, which differ from the other leaves both in shape and texture; and these plants are wholesome to eat, as, for example, the pea and bean. Other plants belonging to the Leguminosæ have seeds which open into their membrane-like cotyledons, and these seeds are poisonous. The flowers of the Leguminosæ are divided into three kinds: those that are butterfly-shaped or papilionaceous, like the pea and lupine; those that look like a tuft of silk, like the acacia; and those that have five regular petals, like the cassia or senna tree. The Leguminosæ are of various kinds: some require a stove, some a greenhouse, and some are hardy, and some are trees or shrubs; while others are perennials, biennials, or annuals. The hardy perennials and biennials have almost all pea flowers.

### GENUS I.

#### BAPTISIA, Dec. THE BAPTISIA.

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*Lin. Syst. DECANDRIA MONOGYNIA.*

**GENERIC CHARACTER.**—Calyx 4—5-cleft, bilabiate. Petals five, nearly equal in length. Vexillum with reflexed sides. Stamens deciduous. Legume ventricose, pedicellate, many-seeded. North Ameri-

can herbs, with trifoliate, rarely simple leaves, and racemes of yellowish or blue flowers. (*G. Don.*)<sup>1</sup>

**DESCRIPTION, &c.**—The species included in this genus are all showy North American plants, generally with trifoliate leaves, and yellow or purple pea-flowers, which are produced in upright racemes. The name *Baptisia*, which is derived from *Bapto*, to dye, was applied to this genus by Professor De Candolle, on account of the use made of the roots of some of the species in dyeing. The species are all hardy, or very nearly so, and they will grow in any common garden soil. They are propagated by seeds, or division of the roots.

## 1.—BAPTISIA PERFOLIATA, R. Br. THE PERFORATE-LEAVED BAPTISIA.

**SYNONYMES.**—*Crotalaria perfoliata*, *Lin.*; *Rafnia perfoliata*, *Willd.*; | **SPECIFIC CHARACTER.**—Quite smooth; leaves perforate, roundish, *Sophora perfoliata*, *Walt.*; *Podalyria perfoliata*, *Michx.* | quite entire, rather glaucous; flowers axillary, solitary. (*G. Don.*)

**DESCRIPTION, &c.**—This plant is remarkable as being the only species of *Baptisia* which has entire leaves, which are perforate, that is, the stem appears to come through them, as in the honeysuckle. The flowers are small and yellow. The species is a native of Georgia and Carolina, on dry sandy hills, and it was introduced in 1793. It grows about three feet high, and flowers in August.

## 2.—BAPTISIA AUSTRALIS, R. Br. THE SOUTHERN BAPTISIA.

**SYNONYMES.**—*Sophora australis*, *Sims.*; *Podalyria australis*, *Vent.*; | are, as well as the branches, smooth; leaflets oblong, cuneated, obtuse, *P. carulca*, *Pursh.* four times longer than the petiole; stipules lanceolate, acute, twice

**VARIETY.**—*B. a. exaltata*; *B. exaltata*, *Swt.* t. 97.

**ENGRAVINGS.**—Bot. Mag. t. 509; and our fig. 2 in Plate 34.

**SPECIFIC CHARACTER.**—Stem branched, diffuse; leaves stalked, and

apiculated.

**DESCRIPTION, &c.**—A very showy species, with dark purple flowers; quite hardy, and flowering abundantly. *Baptisia exaltata* is probably a variety of this species, as it only differs in growing more erect, and much taller, being often four feet high; while *B. australis* is rarely more than two feet. The latter species is a native of West Carolina, and it was introduced in 1758. It may be propagated either by division of the roots, or seeds, which it ripens in abundance.

## 3.—BAPTISIA ALBA, R. Br. THE WHITE BAPTISIA.

**SYNONYMES.**—*Sophora alba*, *Walt.*; *Podalyria alba*, *Sims*; *Crotalaria alba*, *Lin.* | branches, glabrous; leaflets elliptic-oblong, obtuse; stipules deciduous,

**ENGRAVINGS.**—Bot. Mag. t. 1117; and our fig. 3 in Plate 34.

**SPECIFIC CHARACTER.**—Leaves stalked, and are, as well as the

subulate, shorter than the petioles; racemes terminal; ovaries glabrous. (*G. Don.*)

**DESCRIPTION, &c.**—Strongly resembling *B. australis*, except in the flowers, which are white. It is quite hardy, but is best propagated by seeds, as it does not bear moving well. It is a native of the West of Virginia and Carolina, where it is found on the banks of rivers. It was introduced by Mr. Mark Catesby in 1724. It flowers in June, about the same time as *B. australis*.

## 4.—BAPTISIA TINCTORIA, R. Br. THE DYER'S BAPTISIA.

**SYNONYMES.**—*Podalyria tinctoria*, *Michx.*; *Siphora tinctoria*, *Lin.* | branches, glabrous, upper ones nearly sessile; leaflets roundish-obovate;

**ENGRAVING**—Bot. Mag. t. 1099.

**SPECIFIC CHARACTER.**—Leaves stalked, and are, as well as the

stipules setaceous, almost obsolete; racemes terminal. (*G. Don.*)

**DESCRIPTION, &c.**—A dwarf plant, with small yellow flowers, which are thinly scattered in loose racemes, and trifoliate leaves. The pods are nearly oval, and much inflated. They are raised on a footstalk longer than the calyx, and they retain their long slender style till they are ripe. The species is a native of North America, from Canada to Florida; and it was at first supposed to be the Indigo plant, before *Indigofera tinctoria* was discovered, as a coarse kind of blue dye is made from the pulpy part of the leaves. It flowers from July to September, and is sometimes propagated by dividing its roots, but it is safer to depend on the seeds. It requires a dry soil and a sheltered situation.









## OTHER SPECIES OF BAPTISIA.

## B. CONFUSA, Swt.

Nearly allied to *B. australis*. A native of North America, introduced before 1758.

## B. MINOR, Lehm.

Introduced in 1828. A dwarf species, with yellow flowers.

## B. MOLLIS, Nutt.

Stems purplish, and flowers blue; leaves often two inches long, and one inch broad. A decumbent plant; a native of Upper Carolina; introduced in 1824.

## B. VILLOSA, Ell.; SOPHORA VILLOSA, Walt.; PODALYRIA VILLOSA, Michx.

Flowers yellow, resembling those of a Lupine. A native of Virginia and North Carolina, in low sandy grounds; introduced in 1811. This species looks very well in a mass with *B. alba* and *B. australis*.

## GENUS II.

## RAFNIA, Thunb. THE RAFNIA.

*Lin. Syst.* MONADELPHIA DECANDRIA.

**GENERIC CHARACTER.**—Calyx cleft into five to the middle, four upper lobes broadest, sometimes distinct, sometimes variously connected; lower lobe setaceous, and very acute. Corolla smooth, with an obtuse keel and a roundish vexillum. Stamens monadelphous, with the sheath cleft in front at length. Legume lanceolate, compressed, many-seeded. Smooth plants, usually assuming a lurid blackish hue in drying. Leaves simple, entire, not stem-clasping, alternate, but with the floral ones sometimes opposite. Flowers of all yellow.

**DESCRIPTION, &c.**—The plants belonging to this genus were formerly included in that of *Crotalaria*, but they were separated, by Professor De Candolle, on account of a difference in the calyx and the pod, which contains only one seed; and the new genus was named by him in honour of Professor Rafn, a German botanist. All the species have yellow flowers, and all but one are greenhouse shrubs.

## 1.—RAFNIA TRIFLORA, Lin. THE THREE-FLOWERED RAFNIA.

**SYNONYMES.**—*Crotalaria triflora*, Lin.; *Borbonia cordata*, Andr.

**ENGRAVINGS.**—Bot. Mag. t. 482; and our fig. 1 in Plate 34, under the name of *Baptisia triflora*.

**SPECIFIC CHARACTER.**—Leaves simple, ovate, sessile, glabrous.

Branches angular. Peduncles lateral, one-flowered, but growing three together.

**DESCRIPTION, &c.**—This very showy plant is a biennial, introduced from the Cape of Good Hope in It requires a slight degree of protection during winter; but if the seeds be sown on a hot-bed in February, and the plants afterwards removed to single pots, they may be set in the open air all the summer, and if kept in a frame or greenhouse during winter, they may be planted in the open ground in May, when they will flower in July and August. To ripen seed, however, a plant may be kept in the greenhouse. This plant when first introduced was called *Crotalaria*, afterwards *Baptisia*, and lastly *Rafnia*.

## GENUS III.

## THERMOPSIS, R. Br. THE THERMOPSIS.

*Lin. Syst.* DECANDRIA MONOGYNA.

**GENERIC CHARACTFR.**—Calyx oblong or campanulate, 4—5-toothed, somewhat bilabiate, convex behind, and attenuated at the base. Petals five, about equal in length. Vexillum with reflexed sides. Keel obtuse. Stamens permanent. Legume compressed, falcate or linear,

many-seeded. Perennial herbs, clothed with silky villi. Leaves trifoliate. Stipules ovate-lanceolate, leafy. Racemes terminal. Flowers pedicellate, twin, or somewhat verticillate, yellow. (*G. Don.*)

**DESCRIPTION, &c.**—The species belonging to this genus appear to have given a great deal of trouble to botanists, as they have been removed two or three times to different genera. They are all handsome plants, with large yellow pea-flowers, closely resembling those of the different kinds of *Cytisus*, or *Lupine*. The name of *Thermopsis*, indeed, indicates this latter resemblance, as it is from two Greek words, signifying like a *Lupine*.

## 1.—THERMOPSIS RHOMBIFOLIA, Nutt. THE RHOMBOID-LEAVED THERMOPSIS.

**SYNONYMES.**—*Cytisus rhombifolius*, *Fraser.*

**SPECIFIC CHARACTER.**—Leaves stalked; leaflets rhomb-ovate, somewhat cuneated, rather silky-pubescent; stipules obliquely ovate, acute,

shorter than the petiole; lower flowers of the raceme twin, on very short pedicels.

**DESCRIPTION, &c.**—The flowers are yellow, and closely resemble those of a *Cytisus*. The plant is a native of Louisiana, and it was introduced in 1811.

## 2.—THERMOPSIS FABACEA, Dec. THE BEAN-LIKE THERMOPSIS.

**SYNONYMES.**—*T. rhombifolia*, *Rich.*; *Sophora fabacea*, *Pall.*; *S. lupinoides*, var. *Lin.*; *Thermia rhombifolia*, *Nutt.*; *Cytisus rhombifolius*, *Pursh.*

**ENGRAVING.**—Bot. Mag. t. 3611.

**SPECIFIC CHARACTER.**—Leaves stalked; leaflets broad-oval; stipules broad-ovate, obtuse, shorter than the petioles; racemes with alternate flowers. (*G. Don.*)

**DESCRIPTION, &c.**—This species is found on the whole of the western side of North America, from north to south; but nowhere on the east. It is also found in Kamtschatka. It is quite hardy, and it is readily increased by dividing its creeping root. It grows best in sandy soil. It was first introduced in 1824; but afterwards again in 1837.

## 3.—THERMOPSIS LANCEOLATA, R. Br. THE LANCEOLATE-LEAVED THERMOPSIS.

**SYNONYMES.**—*Sophora lupinoides*, *Pall.*; *Podalyria lupinoides*, *Willd.*

**ENGRAVING.**—Bot. Mag. t. 1389.**SPECIFIC CHARACTER.**—Leaves nearly sessile, lower and upper ones

simple, like stipules, the rest trifoliate; leaflets oblong-lanceolate; stipules twice the length of the petioles, or more; flowers twin on the racemes; pedicels shorter than the calyx. (*G. Don.*)

**DESCRIPTION, &c.**—This species bears considerable resemblance to the last in its flowers, though its leaves are smaller. It is a native of Siberia, whence it was introduced so long back as 1775, though it is rarely to be met with in gardens. It is quite hardy, but it is very liable to be eaten by slugs.

## 4.—THERMOPSIS CORONENSIS, Dec. THE ALPINE THERMOPSIS.

**SYNONYMES.**—*Sophora alpina*, *Pall.*; *Podalyria alpina*, *Willd.***SPECIFIC CHARACTER.**—Leaves sessile, or on very short stalks; leaflets ovate, acute; stipules like the leaves, and with them constituting

a kind of half whorl; flowers twin on the racemes, nearly sessile; calyx villous. (*G. Don.*)

**DESCRIPTION, &c.**—This species is much smaller than the others. It is a native of the Altaien Mountains, whence it was introduced in 1824. It is quite hardy.

## GENUS IV.

ANTHYLLIS, *Lin.* THE KIDNEY VETCH.*Lin. Syst.* MONADELPHIA DECANDRIA.

**GENERIC CHARACTER.**—Calyx tubular, five-toothed, permanent after flowering, more or less inflated. Wings about equal with the carina and vexillum. Stamens all connected. Legume ovate, one—two—seeded, rarely oblong-linear, many-seeded, always hidden by the calyx. (G. Don.)

**DESCRIPTION, &c.**—The common Kidney Vetch is well known as a pretty little British plant, but as it is seldom grown in gardens I have not thought it worth figuring. There are numerous species, some of which are greenhouse shrubs, and all of which differ so much from each other, that several botanists have proposed dividing the genus into several genera. The name of Anthyllis signifies “bearded flower,” in allusion to the shaggy calyx.

1.—ANTHYLLIS MONTANA, *Lin.* THE MOUNTAIN KIDNEY VETCH.

ENGRAVINGS.—Swt. Brit. Flow. Gard. t. 79.

as well as the branches, white from villi; leaflets fifteen—nineteen,

SPECIFIC CHARACTER.—Herbaceous, tufted; leaves pinnate, and arc, oval oblong; heads solitary, on long peduncles. (G. Don.)

**DESCRIPTION, &c.**—A very pretty little plant, with clusters of pink flowers, and bluish green leaves. It is a dwarf plant, seldom above six inches high, but growing in large tufts, from its numerous stems and widely spreading branches. This habit of growth renders it a valuable plant for rockwork; particularly as it thrives best in light sandy soil. The best mode of increasing it is by seeds, which generally ripen plentifully, but it may also be increased by cuttings rooted under common hand-glasses, but they must be planted thinly, or they will be liable to drop off.

2.—ANTHYLLIS WEBBIANA, *Hook.* MR. WEBB'S KIDNEY VETCH.

ENGRAVINGS.—Bot. Mag. t. 3284; Swt. Brit. Flow. Gard. 2d ser. t. 292

SPECIFIC CHARACTER.—Herbaceous; covered with a silvery, silky down. Leaflets elliptic, acute, nearly equal; bracts palmate

**DESCRIPTION, &c.**—This very pretty little plant is a native of the Peak of Teneriffe, whence it was introduced by Mr. Philip Barker Webb, to whom the floricultural world owes so many beautiful plants from the same quarter. It is very nearly allied to the common Kidney Vetch of Britain, but it differs in its long silvery pubescence, which is so glossy as to give it a silvery hue at a little distance, particularly when the sun is shining on it. It is well adapted for rockwork, and thrives most in a sandy soil. It was introduced in 1830.

## GENUS V.

TRIFOLIUM, *Lin.* THE CLOVER.*Lin. Syst.* DIADELPHIA DECANDRIA.

**GENERIC CHARACTER.**—Calyx tubular, permanent, glandless, five-cleft; segments subulate. Carina shorter than the wings and vexillum. Stamens diadelphous. Legume small, hardly dehiscent, usually ovate, 1—2-seeded, shorter than calyx, and covered by it, rarely oblong, and containing three—four seeds, in which case it exceeds the calyx a little.

Herbs. Stipules adnate to the petioles. Leaves usually trifoliate, rarely with five leaflets. Flowers disposed in dense heads or spikes, bracteate, purple, white or cream-coloured. Petals in the greater part of the species joined together at the base. (G. Don.)

**DESCRIPTION, &c.**—The name of Clover is so associated in most minds with the clover of fields and meadows, that it seems difficult to imagine ornamental flowers belonging to the same genus. There are, however, several

species of *Trifolium* that are decidedly ornamental, as for example *T. incarnatum*, the Scarlet Clover, an ornamental species; and nearly all the perennial kinds. Most of the species are natives of Europe, and they are all hardy in British gardens. The name, *Trifolium*, alludes to the trifoliate leaf of the common clover.

#### 1.—*TRIFOLIUM CANESCENS*, *Willd.* THE GREY CLOVER.

**SYNONYME.**—*T. pannonicum*, *Jacq.*

**ENGRAVING.**—*Bot. Mag.* t. 1168.

**SPECIFIC CHARACTER.**—Stems ascending, covered with appressed hairs; leaflets obovate, emarginate, villous; stipules lanceolate-sub-

late; heads terminal, large, oblong, nearly sessile; calyx smooth; the segments lanceolate and pilose, dilated at the base, lowest one a little longer; corolla monopetalous, much longer than the segments. (*G. Don.*)

**DESCRIPTION, &c.**—The flowers, which are very long and greyish, grow in large, oblong, spike-like heads. The species is a native of America, and also of Hungary; it was first introduced in 1752, and again in 1806. It is quite hardy in British gardens.

#### 2.—*TRIFOLIUM OLYMPICUM*, *Hornem.* THE OLYMPIAN CLOVER.

**ENGRAVING.**—*Bot. Mag.* t. 2790.

**SPECIFIC CHARACTER.**—Stem erect, hairy; leaflets hairy, lanceolate-elliptic, entire; stipules subulate, sheathing; spikes of flowers oblong,

solitary; calyx hairy, with the lower tooth equal in length to the tube of the corolla; vexillum very long.

**DESCRIPTION, &c.**—This plant bears considerable resemblance to the preceding species; but the head of flowers is rather flame-shaped than oblong, and the flowers themselves are whiter; and when they are slightly coloured, they have rather a yellowish than a grey tinge. The leaflets are oblong, and distinctly marked with veins. The species is found wild on Mount Olympus, and in other parts of Greece; and it was introduced in 1810. It will grow in any common garden soil.

#### 3.—*TRIFOLIUM FIMBRIATUM*, *Lindley.* THE FRINGED CLOVER.

**ENGRAVING.**—*Bot. Reg.* t. 1070.

**SPECIFIC CHARACTER.**—Stems prostrate, glabrous; leaflets oval, smooth, toothed, the teeth setaceous; heads of flowers on long peduncles; involucrum shorter than the flowers, and are, as well as the

stipules, multifid; the segments awned; calyx turbinate, with the segments pungent, about the length of the tube of the corolla; seeds round, black. (*G. Don.*)

**DESCRIPTION, &c.**—This species is remarkable for its pretty little tufts of dark purple flowers, its leaves with dark red margin, and its fringed bracts, which all together make it quite unlike the common kinds of clover. It was found on the banks of the Columbia River, by Douglas, by whom seeds were sent home in 1826. Dr. Lindley observes of it, in the Botanical Register, "that it flowers in September and October, and seems well adapted for ornamenting rockwork."

#### 4.—*TRIFOLIUM UNIFLORUM*, *Lin.* THE SINGLE-FLOWERED CLOVER.

**SYNONYMES.**—*T. Buxbaumii*, *Stern.*; *T. venenum repens*, *Burm.*; *Melilotus cretica*, *Tourne.*; *Spica trifolia*, *Alpin.*

**ENGRAVING.**—*Swt. Brit. Flow. Gard.* 2d. ser. t. 200.

**SPECIFIC CHARACTER.**—Plant tufted, creeping, stems very short; leaflets three, ovate, acuminate, toothed, nerved; stipules sheathing,

ending each in a long acumen; flowers axillary, solitary, on short peduncles; calyx cylindrical, striated; the segments short, subulate, and nearly equal; corolla very long, much longer than the calyx; legume two-seeded; seeds ovoid, apiculated. (*G. Don.*)

**DESCRIPTION, &c.**—This clover is remarkable for producing its flowers singly, or in threes, and not in heads. The flowers themselves appear in May, and are large, with yellowish wings and keel, and a very large standard tipped with bright rose-colour; but there is a variety with white flowers. The leaves are of a clear lively green. The plant is quite dwarf, growing in tufts, and forming a mass of flowers; the brilliant rose-colour of those of the species contrasting agreeably with the lively green of the leaves. The plant is quite hardy, and is increased by

dividing the roots; it grows best in sandy soil, and is peculiarly adapted for rockwork. It is a native of the south of Europe, and was introduced in 1822.

### 5.—TRIFOLIUM REFLEXUM, *Lin.* THE BUFFALO CLOVER.

ENGRAVING.—*Bot. Mag.* t. 3471.

SPECIFIC CHARACTER.—Plant pilose; stems ascending; leaflets obovate, serrulated; stipules foliaceous, obliquely-cordate, acuminate; heads of flowers globose, axillary; flowers on long pedicels, at length

deflexed; calycine segments nearly equal, very narrow, one-nerved, nearly twice the length of the tube, but shorter than the corolla. (*G. Don.*)

DESCRIPTION, &c.—This very handsome species has the flowers in heads, like those of the common clover, but very much larger. The flowers are pink and white, the standard being pink, and the wings and keel of a pure white. It is a native of Virginia and Mexico, and it was first introduced in 1794; it was, however, soon lost, and was not re-introduced till 1835, when it was sent by Mr. Drummond from Texas. It is quite hardy in the open air in Britain, and will grow in any common garden soil.

### 6.—TRIFOLIUM SPADICEUM, *Lin.* THE BAY-COLOURED CLOVER.

ENGRAVING.—*Bot. Mag.* t. 557.

SPECIFIC CHARACTER.—Stem erect, almost simple, slender, leaves stalked; leaflets oblong, ovate, sessile, dentieulate, stipules leafy, narrow, acuminate; heads of flowers ovoid, on peduncles, vexillum

obcordate; calycine segments unequal; the lower ones long and pilose, the two upper ones small and glabrous; legume ovoid, compressed, one-seeded; seeds irregularly egg-shaped, bay-coloured; radicle prominent.

DESCRIPTION, &c.—A very curious little plant, with delicate foliage and rich chestnut-brown spikes, crowned with golden yellow flowers. It is a native of most parts of Europe, but not of Great Britain, to which country it was introduced in 1778. It is quite hardy, and only requires to be planted in the open border. It is generally propagated by seeds, which it ripens in great abundance.

### 7.—TRIFOLIUM LUPINASTER, *Lin.* THE LUPINE-LIKE CLOVER, OR LUPINE TREFOIL.

SYNONYMS.—*Lupinaster pentaphyllum* *Michx.*; *Pentaphyllum Lupinaster*, *Sal.*

ENGRAVING.—*Bot. Mag.* t. 879.

SPECIFIC CHARACTER.—Plant quite smooth, stem straight, branched; petioles wanting; leaflets five, linear-lanceolate, sharply toothed, mu-

cronate; stipules broad, membranous, acuminate; heads of flowers pedunculate, bractless; flowers umbellate; calyx campanulate, hardly incurved; the segments acute, longer than the tube, but shorter than the corolla; legume six-seeded. (*G. Don.*)

DESCRIPTION, &c.—This very singular plant produces its bright rose-coloured flowers in a kind of crest, which gives it a very singular appearance. It also differs from the other species in having five, and sometimes seven, leaflets instead of three; and in having a long fusiform root. It was introduced in 1763 from Siberia, and it has since been often lost and re-introduced, as it is very difficult to keep, from being only propagated by seeds, which seldom ripen. In other respects it is quite hardy.

## GENUS VI.

### PSORALEA, *Lin.* THE PSORALEA.

*Lin. Syst.* DIADELPHIA DECANDRIA.

GENERIC CHARACTER.—Sepals five, joined together to the middle into a five-cleft, permanent calyx, with the tube usually beset with glands; the lobes acuminate, having the lower one a little more lengthened out than the others. Stamens ten, usually dialeiphius;

the tenth one is sometimes connected with the others at the base. Legume length of calyx, valveless, one-seeded, sometimes ending in a beak. (*G. Don.*)

DESCRIPTION, &c.—The peculiarity of plants belonging to this genus consists in their being all more or less warted with glandular tubercles; and from this the genus takes its name, *Psoralea* signifying warty or scurfy.

Most of the species are Cape shrubs, but some are hardy perennials. The leaves are variable in the different species, but the stipules always adhere to the petioles. The flowers also vary in their disposition, and in their colour, being white, blue, or purple.

### 1.—PSORALEA MELILOIDES, *Michx.* THE MELILOT-LIKE PSORALEA.

**SYNONYMS.**—*P. Asphaltites*, *Sol.*, *Melilotus psoraleoides*, *Nutt.*; *Trifolium Psoraleoides*, *Walt.*

**ENGRAVING.**—Bot. Reg. t. 454.

**SPECIFIC CHARACTER.**—Plant pubescent; leaves pinnately trifoliate;

leaflets lanceolate, glandular beneath; peduncles racemose, length of leaves; racemes or spikes linear; bracteas acuminate, longer than the calyx.

**DESCRIPTION, &c.**—The species is a hardy perennial, with long spike-like racemes of dark purple flowers, somewhat resembling those of *Hardenbergia Comptoniana*. The stem grows about a foot-and-a-half high, and the racemes of flowers are on long terminal peduncles. The species is a native of Virginia and Carolina, whence it was introduced in 1814. It is tolerably hardy, but is killed by severe frosts.

### 2.—PSORALEA PUBESCENS, *Baile.* PUBESCENT PSORALEA.

**ENGRAVING.**—Bot. Reg. t. 968.

**SPECIFIC CHARACTER.**—Leaves pinnately trifoliate; leaflets ovate—oblong, pubescent, dotted on both surfaces; branches, petioles, and peduncles hairy; rather shorter than the leaves. (*G. Don.*)

**DESCRIPTION, &c.**—This very handsome plant requires protection during winter, but in summer it will flower freely in the open ground. The whole plant is covered with a dense pubescence, and the flowers, though small, are of a bright blue. It is a native of Lima, whence it was introduced in 1823.

### 3.—PSORALEA MACROSTACHYIA, *Dec.* THE LONG-SPIKED PSORALEA.

**ENGRAVING.**—Bot. Reg. t. 1769.

**SPECIFIC CHARACTER.**—Leaves pinnately trifoliate, pubescent; leaflets ovate, mucronate; petioles scabrous from glands. peduncles axillary, four times longer than the leaves; spikes cylindrical, and are, as well as the rachis, bracteas, and calyxes, very hairy.

**DESCRIPTION, &c.**—A handsome species, with dark purple flowers, ripening seed abundantly. A native of California, introduced in 1833. It is quite hardy, but grows too luxuriantly in rich soil.

### 4.—PSORALEA ORBICULARIS, *Lind.* THE ROUND-LEAVED PSORALEA.

**ENGRAVING.**—Bot. Reg. t. 1971.

**SPECIFIC CHARACTER.**—Pubescent, with clavate and truncate glands intermixed. Leaves trifoliate, on long peduncles; leaflets sub-rotund, oval. Flower head conical, peduncles very long, axillary. Bracts oblong, concave, and, as well as the calyx, hairy. Stem creeping.

**DESCRIPTION, &c.**—A hardy herbaceous plant, with a creeping stem, from which the flower-stalks rise about six inches high. It is a native of California, whence seeds were sent home by Douglas in 1833.

## GENUS VII.

### HOSACKIA, *Dougl.* THE HOSACKIA.

*Lin. Syst.* DIADELPHIA DECANDRIA.

**GENERIC CHARACTER.**—Calyx campanulate, five-cleft; wings about equal in length to the vexillum; keel beaked; style filiform, crowned by a capitate stigma; legume cylindrical, or a little compressed, straight, smooth. (*G. Don.*)

**DESCRIPTION, &c.**—This genus has been formed from the genus *Lotus*, to which it is so very nearly allied as scarcely to be distinguished, except by professed botanists. The name of *Hosackia* was given in honour of Dr. Hosack, Professor of Botany at New York.

1.—HOSACKIA BICOLOR, *Doug.* THE TWO-COLOURED HOSACKIA.SYNONYMES.—*Lotus pinnatus*, *Hook.*

ENGRAVINGS.—Bot. Reg. t. 1257; and Bot. Mag. t. 2913.

SPECIFIC CHARACTER.—Plant glabrous; flowers umbellate, bractless; leaves with seven—nine leaflets. (*G. Don.*)

DESCRIPTION, &c.—This plant, as it is represented in the *Botanical Register*, is decidedly yellow and white, both being distinctly and clearly marked; but in the *Botanical Magazine* the flowers are all yellow, part being rather fainter than the rest. The plant was found by Douglas on the banks of the Columbia, and introduced by him in 1823. It is quite hardy, and will grow in any common garden soil.

## OTIIER SPECIES OF HOSACKIA.

H. STOLONIFERA, *Lindl.*

The flowers are in clusters, and they are red and yellow, but neither colour is distinct. The species is a native of California, whence it was introduced in 1833. It is a good shrubby plant where any wall or other uninteresting object is to be hidden, as it grows rapidly, and soon forms a thick bush three feet high, and wide in proportion. In a botanical point of view it is interesting, from its embryo having sometimes three cotyledons. It flowers in June, and produces abundance of seeds in August; it also sends up numerous suckers from its stoloniferous roots.

## GENUS VIII.

DALEA, *Michx.* THE DALEA.*Lin. Syst.* MONADELPHIIA DECANDRIA.

SPECIFIC CHARACTER.—Calyx five-cleft or five-toothed, sometimes beset with glands; wings and carina adhering to the tube of the stamens; vexillum short, free, stamens ten, monadelphous, legume ovate, one-seeded, shorter than the calyx. (*G. Don.*)

DESCRIPTION, &c.—This genus, though possessing plants of no great beauty, is interesting, from having been the cause of the well-known flower, the Dahlia, having its name changed by some botanists to Georgina. The two names being, however, both differently spelled, and differently pronounced, the name Dahlia has been restored to the original use. The name of Dalea was given to the present genus in honour of Mr. Thomas Dale, an English botanist of the last century.

1.—DALEA MUTABILIS, *Willd.* THE CHANGEABLE-FLOWERED DALEA.

ENGRAVINGS.—Bot. Mag. t. 2486; and our fig. 6 in Plate 35.

SPECIFIC CHARACTFR.—Erect, branched, glabrous; leaves with five—ten pairs of obovate or obcordate leaflets; spikes of flowers cylindri-

cal, at length much elongated, pedunculate; peduncles hispid just under the spike; calyx glabrous, striated with ten black nerves; bracteas ovate, terminated by a bristle, shorter than the calyx.

DESCRIPTION, &c.—A little half-hardy plant, which may be grown as a biennial in the open ground; but which becomes shrubby when kept in a greenhouse or stove. It is a native of Mexico, whence it was introduced in 1821.

## OTIIER SPECIES OF DALEA.

D. AUREA, *Nutt.*; PSORALEA AUREA, *Poir.*

A native of Upper Louisiana, with golden yellow flowers; introduced in 1811.

## GENUS IX.

GALEGA, *Juss.* THE GOAT'S-RUE.*Lin. Syst. DIADELPHIA DECANDRIA.*

**GENERIC CHARACTER.**—Calyx with five subulate equal teeth. Vexillum obovate-oblong. Keel obtuse. Stamens monadelphous, having the tenth one concrete, with the others one half of its length. Style filiform, glabrous, crowned by a terminal dot-formed stigma. Legume rather terete, torulose, obliquely-striated. Seeds cylindrical. Smooth, erect, perennial herbs, with impari-pinnate leaves, ovate or lanceolate, somewhat sagittate stipules, and axillary, simple, many-flowered racemes. Flowers blue and white. (*G. Don.*)

**DESCRIPTION, &c.**—Hardy, robust-growing perennial plants, with showy flowers. The common species (*G. officinalis*) was formerly used in medicine, and it was said to have such an effect in increasing the quantity of milk in goats, that it was called Goat's Rue. The name of Galega refers to the same property. The genus was formerly a very extensive one, but there are now only four species, all of which are ornamental, though some are more so than others.

1.—GALEGA BILOBA, *Sweet.* TWO-LOBED LEAVED GOAT'S-RUE.

**ENGRAVING.**—*Swt. Brit. Flow. Gard.* t. 159.

**SPECIFIC CHARACTER.**—Stem angularly striated, rather flexuous; leaves usually with five—eight pairs of oblong, silky, pubescent leaf-

lets, which are mucronate and two-lobed at the apex; stipules ovate-lanceolate, acute, acutely-serrate, sagittate; flowers crowded; bracteas subulate; twice the length of the pedicels.

**DESCRIPTION, &c.**—A very handsome, robust-growing plant, with a profusion of rather small blue flowers. Several stems rise from three feet to five feet high, with numerous glaucous green leaves, which are two lobed at the apex, with a slender mucro or bristly point between the lobes. The species is a native of the south of Europe, whence it was introduced about 1823.

2.—GALEGA PERSICA, *Pers.* THE PERSIAN GOAT'S-RUE.

**ENGRAVINGS.**—*Swt. Brit. Flow. Gard.* 2d ser. t. 241; and our *fig.* 3 in Plate 35.

**SPECIFIC CHARACTER.**—Leaves usually with five pairs of ovate-

oblong, rather retuse, mucronate, glaucous leaflets; stem angular, flexuous; stipules narrow-lanceolate, sagittate; bracteas linear-subulate, longer than the pedicels. (*G. Don.*)

**DESCRIPTION, &c.**—A tall, robust-growing plant, with numerous branching stems rising from the same root, and a profusion of rather large white flowers, which are slightly fragrant. The species is a native of Persia, whence it was introduced in 1816. It is quite hardy in British gardens, where it will grow in any common garden soil; and it is easily propagated by seeds, which it ripens in great abundance. It is very nearly allied to *G. biloba*, and, like it, takes up too much room for a small garden.

3.—GALEGA ORIENTALIS, *Lam.* THE ORIENTAL GOAT'S-RUE.

**SYNONYMS.**—*G. montana*, *Schultes.*

**ENGRAVINGS.**—*Bot. Reg.* t. 326; *Bot. Mag.* t. 2192.

**SPECIFIC CHARACTER.**—Leaflets ovate, acuminate, smooth; stipules broad-ovate; racemes longer than the leaves; legumes pendulous; roots creeping. (*G. Don.*)

**DESCRIPTION, &c.**—A handsome plant, with small dark purple flowers, of much more delicate habit of growth than the preceding species. It is a native of the Levant, where it was first discovered by Tournefort, and whence it was introduced by Sir Joseph Banks in 1801. It is also found in the forests on Mount Caucasus. It is quite hardy, and will grow in any common garden soil. The stem is about four feet high.









## OTHER SPECIES OF GALEGA.

G. OFFICINALIS, *Lin.*

A native of Spain, with small flowers, introduced before 1598. There are two kinds, one with blue flowers and one with white.

## GENUS X.

OXYTROPIS, *Dec.* THE OXYTROPIS, OR MOUNTAIN MILK VETCH.

*Lin. Syst. DIADELPHIA DECANDRIA.*

**GENERIC CHARACTER.**—Calyx five-toothed; keel of corolla, ending in an exserted mucrone on the back of the apex. Stamens diadelphous. Legume bilocular, or half bilocular, in consequence of the upper suture being very much bent in. (*G. Don.*)

**DESCRIPTION, &c.**—The species constituting this genus were formerly included in that of *Astragalus*, the Milk Vetch, but were separated by Professor De Candolle, who gave his new genus the name of *Oxytropis*, in allusion to the sharp-pointed keel of the flowers. The species are all hardy; several of them, of which *O. montana* is the type, grow in low close tufts, without stems, and are therefore suitable for rockwork; some others have erect stems, with both the leaves and flowers in whorls; and the rest have the stem erect, but the leaves only in pairs instead of being in whorls.

1.—OXYTROPIS, MONTANA, *Dec.* THE MOUNTAIN OXYTROPIS.

**SYNONYMS**.—*Astragalus montanus*, *Lin.*; *Phoca montana*, *Crantz.*

**ENGRAVING.**.—Bot. Mag. t. 483.

**SPECIFIC CHARACTER.**—Plant almost stemless, villous, the hairs on the petioles and scape spreading; leaflets elliptic-lanceolate; scapes a

little longer than the leaves; racemes short; bracteas one half shorter than the calyxes; legumes erect, terete-oblong, villous, acuminate by the style, half bilocular. (*G. Don.*)

**DESCRIPTION, &c.**—This species, though included in the genus *Oxytropis*, from the shape of the flower, bears more resemblance to the common Milk Vetch in its habit of growth and in its leaves, which are pinnate, with fourteen or fifteen pairs of leaflets, which are small and sharply pointed. The species is common on all the Alps of the South of Europe, and it was introduced in 1581. It will grow in any common garden soil, but it is most suitable for rockwork.

2.—OXYTROPIS LAMBERTI, *Pursh.* LAMBERT'S MOUNTAIN MILK VETCH.

**SYNONYMS.**—*Astragalus Lamberti*, *Spreng.*

**ENGRAVINGS.**—Bot. Mag. t. 2147; Bot. Reg. t. 1054; and our fig. 1, in Plate 35.

**SPECIFIC CHARACTER.**—Plant stemless, silky and pilose in every

part; leaflets lanceolate, acute, rather remote; scape rather longer than the leaves; flowers spicate or capitellate; bracteas lanceolate-linear, rather shorter than the silky calyx. (*G. Don.*)

**DESCRIPTION, &c.**—This is a very beautiful species, from the silkiness of the back of the leaves and stalks. The flowers are also large, and of a very dark purple; they appear in May and June. The plant is one of the very few belonging to the genus that are natives of North America; by far the greatest number of the species being found wild in Siberia. It is quite hardy, and is better suited for a border flower than the preceding species, as it is larger in all its parts. It was introduced in 1818, and it is generally propagated by seeds, which it ripens sparingly.

3.—*OXYTROPIS PILOSA*, *Dec.* THE DOWNTY MOUNTAIN MILK VETCH.

**SYNONYMS.**—*Astragalus pilosa*, *Lin.*; *A. villosus*, *Amm.*; *A. erectus*, *Hall.*; *Cicer montanum*, *Bauh.*

**ENGRAVING.**—Bot. Mag. t. 2483.

**SPECIFIC CHARACTER.**—Stem erect, beset with soft hairs, as well as

**DESCRIPTION, &c.**—This is one of the erect species with the leaves in pairs. The flowers are green, and consequently not showy, though they are pretty when closely examined. The plant is a native of Siberia, whence it was introduced in 1732.

OTHER SPECIES OF *OXYTROPIS*.

Many other species are mentioned in books, though I have not given any details respecting them, as they are rarely seen in gardens.

## GENUS XI.

ASTRAGALUS, *Lin.* THE MILK VETCH.

*Lin. Syst. DIADELPHIA DECANDRIA.*

**GENERIC CHARACTER.**—Calyx five-toothed. Keel of flowers obtuse. Stamens diadelphous. Legume bilocular, or half bilocular, from the upper suture being bent in so much. (*G. Don.*)

**DESCRIPTION, &c.**—The species belonging to this genus are extremely numerous, but they bear a striking resemblance to each other in general appearance and the shape of the flowers. The name of *Astragalus* is generally said to signify Milk Star; but this meaning does not seem in any way applicable to the plants. Others derive the name of *Astragalus* from a Greek word, signifying vertebrae, or a die used for games at chance; but these explanations are as inapplicable as the other.

1.—*ASTRAGALUS PROCUMBENS*, *Hook.* THE PROCUMBENT MILK VETCH.

**ENGRAVINGS.**—Bot. Mag. t. 3263; and our *fig.* 5 in Plate 35.

**SPECIFIC CHARACTER.**—Plant clothed with hirsute tomentum in every part; stems prostrate, branched; stipules concrete; leaves with

11-14 pairs of elliptic, retuse leaflets; peduncles racemose, longer than the leaves; wings of flowers not half so long as the keel; legumes, in an immature state, linear, hairy, and reflexed. (*G. Don.*)

**DESCRIPTION, &c.**—This very pretty delicate-looking plant is a native of South America, whence it was introduced in 1831. It appears to require a slight protection during winter.

2.—*ASTRAGALUS VESICARIUS*, *Lin.* THE BLADDER MILK VETCH, OR WHITE ITALIAN MILK WORT.

**SYNONYMS.**—*A. albidus*, *Waldst et Kit.*; *A. dealbatus*, *Pall.*; *A. glaucus*, *Bieb.*

**ENGRAVING.**—Bot. Mag. t. 3268.

**SPECIFIC CHARACTER.**—Plant covered with a silky pubescence. Leaves with five or seven pairs of elliptic leaflets. Peduncles much longer than the leaves. Calyx bladdery. Legumes hairy, longer than the calyx.

**DESCRIPTION, &c.**—This is a dwarf species, but with a long descending root, so that it requires a loose deep soil. It is a native of sandy wastes in the South of France, Russia and Hungary, whence it was introduced in 1637. The flowers are produced in tufted heads, and are of a very rich deep purple, becoming blue when they fade; and though the name of White Italian Milk Vetch, and some of the botanic names applied to this species, have induced some persons to think that the flowers are white in a wild state, the names implying whiteness appear only applied to the silky down of the leaves and stems.

## OTHER SPECIES OF ASTRAGALUS.

A. SUCCULENTUS, *Sprng.*; *Bot. Reg.* t. 1321.

A very beautiful species, with pinkish lilac flowers; found by Dr. Richardson in Arctic America, and introduced in 1827. It is a decumbent plant, quite hardy, but requiring peat earth.

A. LINEARIFOLIUS, *Pers.*; A. ONOBRYCHIS, var. ANGUSTIFOLIUS, *Dec.*; A. TENUIFOLIUS, *Willd.*; *Swed. Brit. Flora. Gard.* t. 73.

A handsome species, with dark reddish purple flowers, and leaves with twelve or thirteen pairs of leaflets; the stem is erect, and the plant grows about two feet high, the stem and branches being covered with a dark brown or black down. The species is a native of Siberia, and it was introduced in 1780. It will grow in any common garden soil.

A. CARYOCARPUS, *Dec.*; A. CRASSICARPUS, *Fras.*; A. CARNOSUS, *Nott.*; *Bot. Reg.* t. 176.

This species is remarkable for its pods, which resemble small walnuts; but it is more curious than beautiful, as the flowers have a pale, faded appearance. It is a native of Louisiana, whence it was introduced in 1811.

A. STIPULATUS, *Don*; *Bot. Mag.* t. 2380.

A native of Nepaul; introduced in 1821. A tall weedy plant, with small, dingy flowers.

A. MONSPESSULANUS *Lin.*; *Bot. Mag.* t. 375.

A pretty little dwarf plant, with rather large pinkish flowers. A native of the south of France, where it grows in great abundance on the rocks near Montpelier. It was introduced by Dr. Pitcairn in 1776. It is very suitable for rockwork, or growing in a pot, as its flowering stems will hang down to a considerable length; but it is not at all fit for growing in a border, as the flowers lie on the ground, and get dirty and disfigured by the first shower of rain. It is propagated by seeds, or cuttings of the stem, which strike freely; but it is generally killed by any attempt to divide the root.

A. BRACHYCARPUS, *Bieb.*; *Bot. Mag.* t. 2335.

The flowers are reddish, and resemble those of *A. monspessulanus*, but the flower-stem is more erect, and the leaflets are rounder. A native of Mount Caucasus, introduced in 1820. It is propagated by seeds, and forms a very pretty little border-plant. The specific name signifies short-podded, and alludes to the pod being shorter than the calyx.

## GENUS XII.

CORONILLA, *Dec.*; THE CORONILLA, OR HATCHET VETCH.*Lin. Syst.* DIADELPHIA DECANDRIA.

**GENERIC CHARACTER.**—Calyx campanulate, short, 5-toothed, the two superior teeth approximate, and joined together higher up than the rest. Claws of petals usually longer than the calyx. Carina acute. Stamens diadelphous. Legume nearly tenate, slender, at length separating into oblong 1-seeded joints. Seeds ovate or cylindrical. (*G. Don.*)

**DESCRIPTION, &c.**—Most of the species are shrubs, but there are several hardy perennials belonging to the genus, and one or two annuals. The name of Coronilla, signifies crown-flower, and alludes to the flowers being produced in tufts or crowns on the upper part of the stem.

1.—CORONILLA IBERICA, *Bieb.* THE IBERIAN CORONILLA OR EASTERN HATCHET VETCH.

**SYNONYMS.**—*C. orientalis*, *Mill* membranous, orbicular, denticulated. Leaflets obovate, ciliated.  
**ENGRAVINGS.**—Swtl. Bot. Flow. Gard. t. 25; Lodd. Bot. Cab. t. Umbels seven or eight flowered. Legumes tetragonal, incurved.  
 789; and our fig. 4 in Plate 35. (*G. Don*)

**SPECIFIC CHARACTER.**—Plant prostrate, glabrous. Stipules distinct,

**DESCRIPTION, &c.**—A showy plant, with large golden yellow flowers and pinnate leaves. It has a creeping root, but the stem is ascending. It is a native of Asia Minor, and was introduced about 1822. It is quite hardy, and thrives so well in good soil as soon to become troublesome. Its roots indeed spread so far, as to injure those of every plant near them, and to render it extremely difficult to get rid of the plant when it has once been introduced.

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OTHER SPECIES OF CORONILLA.

*C. MINIMA*, *Lin.*; *Bot. Mag.* t. 2179.

A hardy plant, with very small clusters of yellow flowers. A native of the south of Europe; introduced in 1658. Not very ornamental.

*C. VARIA*, *Lin.*; *Bot. Mag.* t. 253.

A climbing plant, which if not supported, will trail on the ground; with purple flowers. It is a native of Germany, and was introduced in 1640. It is quite hardy, but grows best in a dry soil, and the colour of the flowers varies from dark purple to white, according to the situation. It is, however, a troublesome plant in a garden, from the hold its creeping roots take of the soil, and the difficulty there is in eradicating it when it has once obtained possession.

*C. CORONATA*, *Lin.*, *C. MONTANA*, *Scop.*; *Bot. Mag.* t. 907.

This is properly herbaceous, as though the stem becomes woody at the base it perishes every year, though the root survives without any protection, unless the season should be very wet. It is a native of the mountains of Southern Europe, and was introduced in 1776. It is generally propagated by seeds.

There are several other herbaceous species, many of which have purple or white flowers, but they are rarely seen in British gardens.

## GENUS XIII.

HEDYSARUM, *Dec.*; THE FRENCH HONEYSUCKLE.

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*Lin. Syst.* DIADELPHIA DECANDRIA

**GENERIC CHARACTER.**—Calyx 5-cleft; the segments linear-subulate, and nearly equal. Corolla with a large vexillum and obliquely truncate keel, which is much longer than the wings. Stamens dialeipous, having the staminaceous tube abruptly inflected. Legume constantly of numerous, flat, orbicular or lenticular, regular, 1-seeded joints which are connected together in the middle, and therefore the sutures are convex on both sides. (*G. Don*)

**DESCRIPTION, &c.**—All the species of this genus are very handsome, and well deserving of cultivation. The name of *Hedysarum*, is said to be derived from two Greek words signifying sweet perfume, a name which does not at all apply to the flowers. The species belonging to this genus are easily known by the legumes being jointed, and the flowers are always either pink, white, or purple.

**1.—HEDYSARUM CORONARIUM, Lin. THE COMMON FRENCH HONEYSUCKLE,  
OR GARLAND FLOWER.**

**SYNONYME.**—*H. clypeatum, Ger.*

**SPECIFIC CHARACTER.**—Stems diffuse. Leaves with three or five pairs of elliptic or roundish leaflets, which are clothed with pubescence | beneath, and on the margins. Spikes or racemes of flowers, ovate, crowded; wings of flower twice the length of the calyx. Legumes glabrous, with 2—5 orbicular prickly joints. (*G. Don.*)

**DESCRIPTION, &c.**—This species, though it is merely an ornamental plant in our gardens, in Italy is used for forage. In Calabria, its native country, it grows four feet high, and affords excellent nourishment to horses and cattle both green and made into hay, and it is used for the same purposes in Spain. In England it makes a handsome border flower, and it has been in cultivation since 1596.

**2.—HEDYSARUM ROSEUM, Steph. ROSE-COLOURED FRENCH HONEYSUCKLE.**

**ENGRAVING.**—*Oui fig. 2 in Plate 35.*

**SPECIFIC CHARACTER.**—Stem erect; leaves with 6—8 pair of oblong-lanceolate leaflets, which are clothed with adpressed villi on both surfaces; when young they are canescent beneath. Spikes of flowers | oblong or ovate, pedunculate; vexillum emarginate, shorter than the catina; wings length of the calyx; legumes articulated, pubescent, reticulately veined. (*G. Don.*)

**DESCRIPTION, &c.**—This species is a native of Siberia, whence it was introduced in 1803. It is quite hardy in British Gardens.

**3.—HEDYSARUM TAURICUM, Pall. THE TAURIAN FRENCH HONEYSUCKLE.**

**SYNONYME.**—*H. roseum, Sims; H. fruticosum, Hobl.*

**ENGRAVING.**—*Bot. Mag. t. 996.*

**SPECIFIC CHARACTER.**—Stem erect; leaves with four or six pairs of lanceolate-linear leaflets, which are clothed with adpressed pubescence | beneath. Spikes of flowers ovate. Vexillum emarginate, longer than the wings, but shorter than the keel; joints of legume reticulately veined, horny. (*G. Don.*)

**DESCRIPTION, &c.**—This species closely resembles the last, and is frequently sold for it, but the flowers are of a much more brilliant colour. The standard is of a bright rose-colour, and the keel the richest and purest carmine, while the leaves are quite glaucous. It is a native of Mount Caucasus, and was introduced in 1804. It is quite hardy, but will not live many years, and if the seeds are sown in March or April it will flower the same year, that is, about July. It grows best in calcareous soil, and the flowers are of a deeper colour in soils of that nature than in any others. It grows from six inches to a foot high.

**OTHER SPECIES OF HEDYSARUM.**

**H. HUMILE. Lin.**

A dwarf biennial species, with purplish pink flowers, which grows wild on sandy hills in the south of France. Introduced in 1640.

**H. CARNOSUM, Desf.**

The stems of this species are decumbent, and the leaves thick and fleshy. The flowers are rose-coloured, and in spreading racemes. The species is a native of Barbary, whence it was introduced in 1820. This is a most desirable species, but it is seldom to be met with.

**H. VARIUM, Willd.**

This species is a native of Armenia, and has yellowish flowers. It was introduced in 1820.

**H. LASIOCARPUM, Ledeb.**

The flowers are dark purple, and the pods quite woolly: a native of Siberia on the Altaian Mountains.

*H. RUTIDOCARPUM*, *Dec.*; *H. IBERICUM*, *Bieb.*; *H. ALTAICUM*, *Fisch.*; *H. CRETACEUM*, *Fisch.*;  
and *H. CONSANGUINEUM*, *Dec.*,

Appear nearly allied to this species, and are perhaps only varieties of it.

*H. OBSCURUM*, *Lin.*; *Bot. Mag.* t. 282.

This species has a creeping root, and a loose erect stripe of pendulous pinkish flowers. There is a variety, the flowers of which are white. Introduced in 1640.

*H. BRACHYSENUM*, *G. Don.*

This species is nearly allied to the last, and is probably only a variety. Introduced in 1817.

*H. ALPINUM*, *Lin.*

This is a tall showy plant, with dark purple pendulous flowers in an erect raceme. It is a native of Siberia; introduced in 1798. It is very ornamental, and flowers from May till August.

*H. CAUCASIUM*, *Bieb.*; *H. SIBERICUM*, *Poir.*,

Are only varieties of this species.

#### GENUS XIV.

#### LATHYRUS, *Dec.*; THE EVERLASTING PEA.

*Lin. Syst. DIADELPHIA DECANDRIA.*

**GENERIC CHARACTFR.**—Calyx campanulate, 5-cleft, the two superior lobes shortest. Corolla papilionaceous. Stamens diadelphous. Style complanate, dilated at the apex, villous or pubescent in front. Legumes oblong many-seeded, 2-valved, 1-celled. Seeds globose or angular. (*G. Don.*)

**DESCRIPTION, &c.**—This order is well known from the beautiful annual sweet peas that are so common in our gardens, and the splendid perennials allied to the Everlasting Pea. The name of Lathyrus signifies something exciting, and it alludes to the real or supposed qualities of the seeds. The species are all hardy or half hardy climbing plants, with very showy pea-flowers and they will all grow in any common garden soil. Most of them seed freely, but all the perennials may be readily increased by dividing the root.

##### 1.—*LATHYRUS MAGELLANICUS*, *Lam.* LORD ANSON'S PEA.

**SYNONYMES.**—*L. armitigenus*, *West*; *Pisum americanus*, *Michx.*

**ENGRAVINGS.**—*Swt. Brit. Flower Gard.*, 2d ser. t. 344; *Bot. Gard.* t. 526; *Flor. Cab.* t. 110; and our *fig.* I in Plate 36.

**SPECIFIC CHARACTER.**—Plant glabrous and blackish; stems a little

branched, tetragonal, but not winged; leaves with one pair of ovate or

ovate-oblong leaflets; stipules broad, cordately sagittate, broader than the leaves; tendrils trifid; peduncles long, 3—4-flowered; legumes

unknown.

**DESCRIPTION, &c.**—This splendid plant was introduced by the cook on board Lord Anson's ship, the Centurion, who gathered the seeds when that vessel touched at the Straits of Magellan in 1744. Lord Anson presented some plants of it to the Botanic Garden, Chelsea, where it was grown for several years by the celebrated Miller, author of Miller's Dictionary, who was curator there. It is quite hardy, only requiring a pure air; but it looks best trained against a wall. As it is a maritime plant, it is said to be improved by putting a little salt occasionally in the water given to it. It is suffruticose at the base, and evergreen. It may be increased by seeds or division of the root, but the usual way of propagating it is by cuttings, which strike freely.









2.—*LATHYRUS LATIFOLIUS*, Lin. COMMON EVERLASTING PEA.

ENGRAVING.—Eng. Bot. t. 805; 2d ed. t. 1005.

SPECIFIC CHARACTER.—Plant quite glabrous; stems winged; leaves with one pair of elliptic, rather glaucous, 3—5-nerved, obtuse, and mucronate leaflets; stipules broad, ovate, semi-sagittate; peduncles many-flowered, longer than the leaves; legumes long, compressed, reticulated lengthwise. (*G. Don.*)

DESCRIPTION, &c.—This very handsome species, if not a native of Britain, has been so long cultivated in this country as to be almost naturalised. It is quite hardy, and has bright rose-coloured flowers, of which bees are very fond, and which yield abundance of honey. It is a most valuable plant, as it will grow in any soil and situation; and its flowers, when produced in the shade, are of as brilliant a colour as those which have expanded in the sunshine. It is thus very useful for arbours, as the flowers of most other climbing plants which hang down inside are very apt to be pale. We had one at Bayswater, which climbed up a mulberry-tree, and pushing its flowers through the branches, looked like a giant nosegay. The only objection is, the flowers are not fragrant.

3.—*LATHYRUS GRANDIFLORUS*, Sims. LARGE-FLOWERED EVERLASTING PEA, OR PERENNIAL SWEET PEA.

ENGRAVINGS.—Bot. Mag. 1938: and our fig. 2 in Plate 36.

SPECIFIC CHARACTER.—Hairy; stems tetragonal, winged; leaves with one pair of large, ovate, obtuse, waved leaflets; stipules small, semi-sagittate, lanceolate; peduncles 2—3-flowered, longer than the leaves; teeth of calyx acute, longer than the tube; legumes long, linear, tuberculous. (*G. Don.*)

DESCRIPTION, &c.—One of the handsomest of our climbing perennials. The flowers are as large and as brilliant as the finest and largest sweet pea; but they are destitute of fragrance. It is a native of the south of Europe, where it grows freely on hedges and bushes. It is particularly abundant in Sicily, at Palermo, and on Mount Etna. In England it will grow in any garden soil, and in fact, when it has once taken possession of the soil, it is rather troublesome, on account of its creeping root, which it is very difficult to eradicate. In our little garden it has become quite a weed. It was introduced in 1814. It is generally propagated by dividing the root, as plants raised from seeds will not flower the first year.

4.—*LATHYRUS ELLIPTICUS*, D. Don. THE ELLIPTIC-LEAVED EVERLASTING PEA.

SYNONYME.—*L. rotundifolius*, var. *ellipticus*, Scr.

ENGRAVINGS.—Swt. Brit. Flora, Gard., 2d ser. t. 333; and our fig. 5 in Plate 36.

SPECIFIC CHARACTER.—Plant quite glabrous. Stems much branched.

Leaves with one pair of elliptic, seven-nerved, mucronate leaflets. Stipules linear, acuminate, entire. Peduncles many-flowered, much larger than the leaves. Calycine teeth lanceolate, acuminate. Legumes oblong, many-seeded, glabrous.

DESCRIPTION, &c.—This species is well adapted for small gardens, as it does not grow to so large a size as any of the other kinds of Everlasting Pea. The flowers are of a rich deep crimson, but they die off a bright blue; they are about the size of those of the common Everlasting Pea, *L. latifolius*. It is a native of Georgia, and it was introduced in 1822. It will grow in any common garden soil and open situation, and it is increased by dividing the roots, or seeds, which it ripens in abundance.

## OTHER SPECIES OF LATHYRUS.

*L. INTERMEDIUS*, Waller.

A plant with rose-coloured flowers, a native of Germany; introduced in 1820.

*L. PRATENSIS*, Lin.

A British species, with yellow flowers; sometimes called the Yellow Vetchling.

*L. TUBEROSUS, Lin. ; Bot. Mag. t. 111.*

A very pretty species, with pale pink flowers, and brown tuberous roots, which are eaten in Holland. Gerard calls it the Pea Earth-nut. It was introduced before 1596.

*L. ROSEUS, Stev.*

Very like the preceding species; but with the flowers of a dark rose-colour. A native of Iberia, introduced in 1822.

*L. PISIFORMIS, Lin.*

Flowers purple. A native of Europe; introduced in 1795.

*L. CALIFORNICUS, Doug.; Bot. Reg. t. 1144.*

The flowers are of a deep crimson, when in the bud, but they afterwards become purple, the keel being of a somewhat lighter colour than the standard. The plant is of a robust habit, with creeping roots. It grows rapidly in peat soil, and in a sheltered situation. It is a native of California, whence it was introduced in 1826.

*L. MUTABILIS, Nutt. Brit. Flora. Gard. t. 191.*

The flowers are of a purplish pink, striped with dark purplish lines, afterwards changing to a brownish green. More curious than beautiful. A native of Siberia; introduced in 1825.

*L. VENOSUS, Nutt. Brit. Flora. Gard. 2d ser. t. 37.*

A very beautiful species, the flowers of which have a dark purple standard, and pure white wings and keel. The leaves are strongly veined on the lower side. It is a native of North America, and was introduced in 1823.

*L. DECAPHYLLUS, Pursh., Bot. Mag. t. 3123.*

The flowers are small, purple, and not very handsome, but the leaves have from four to six pairs of leaflets. A native of North America; introduced in 1827.

*L. MYRTIFOLIUS, Muhl.*

A native of North America, with small red flowers; introduced in 1822.

*L. POLYMORPHIUS, Nutt.*

A native of the banks of the Missouri; introduced in 1824.

*L. HETEROPHYLLUS, Lin.*

A native of Europe, at the foot of mountains. Flowers large, with the standard and wings pink, and the keel white. Introduced in 1731.

## GENUS XV.

OROBUS, *Tourne.* THE BITTER VETCH.*Lin. Syst. DIADELPHIA DECANDRIA.*

**GENERIC CHARACTER.**—Calyx campanulate, five-cleft, the two superior lobes shortest. Corolla papilionaceous. Stamens diadelphous. Style slender, linear, villous at the apex. Legume cylindrical, oblong, one-celled, two-valved, many-seeded. Seeds with a linear hylum. (*G. Don.*)

**DESCRIPTION, &c.**—This genus consists of very handsome hardy plants of easy culture. The name of Orobus signifies to excite an ox, but it is not known why it was applied to this genus. Most of the species are hardy perennials.

1.—*OROBUS LATHYROIDES*, Lin. THE LATHYRUS-LIKE BITTER VETCH.

ENGRAVING.—Bot. Mag. t. 2098.

SPECIFIC CHARACTER.—Plant smoothish. Leaflets ovate, mucronate, with divaricato nerves. Stipules semi-sagittate, a little toothed,

smaller than the leaflets. Peduncles many-flowered, axillary, about equal in length to the leaves. Calycine teeth shorter than the tube. Legumes compressed, glabrous. Two or three-seeded. (G. Don.)

DESCRIPTION, &c.—This species has a great number of small blue flowers crowded together, several racemes together; with broad shining leaflets, and black roots. A native of Siberia; introduced in 1758.

2.—*OROBUS FISCHERI*, Swt. PROFESSOR FISCHER'S OROBUS.

ENGRAVING.—Swt. Brit. Flow. Gard. t. 289.

SPECIFIC CHARACTER.—Stem tetragonal, almost simple, smoothish. Leaflets linear, bluish, mucronulate, nerved lengthwise, rather silky

beneath. Stipules linear, acute, a little toothed, with one auricle at the base. Racemes pedunculate, many-flowered. Flowers secund. Legumes reticulately veined, six or seven seeded. (G. Don.)

DESCRIPTION, &c.—This species closely resembles *O. atropurpureus* in its flowers, but its leaves are somewhat different. It is a native of Siberia, whence it was introduced in 1827.

3.—*OROBUS HIRSUTUS*, Lin. THE HAIRY OROBUS, OR BITTER VETCH.

SYNONYME.—*O. laxiflora*, Desf.

ENGRAVINGS.—Bot. Mag. t. 2845; and our fig. 4 in Plate 36.

SPECIFIC CHARACTER.—Plant hairy; leaflets ovate, acute, with parallel nerves; stipules unequally sagittate, lanceolate, about the size

of the leaflets; racemes axillary, few-flowered, longer than the leaves, calycine segments nearly equal, setaceous-subulate, much longer than the tube, but much shorter than the corolla; legume compressed, hairy. (G. Don.)

DESCRIPTION, &c.—The flowers of this species are much larger than those of most of the other species of the genus. The leaves have each a single pair of leaflets, and the stipules are very large. The pods are very small, and hairy; indeed the whole plant is covered with soft hairs, and hence the specific name. The species is a native of the Levant, and the whole of the provinces near Mount Caucasus, whence it was introduced in 1822. It is quite hardy; and, as it ripens its seeds perfectly, it is generally propagated by them. It flowers in May.

4.—*OROBUS VERNUS*, Lin. SPRING BITTER VETCH.

ENGRAVING.—Bot. Mag. 521.

SPECIFIC CHARACTER.—Stem simple, flexuous; leaflets ovate, lanceolate, nerved lengthwise; stipules semi-sagittate. Peduncles many-

flowered, shorter than the leaves; flowers secund, nodding; legumes reticulately veined, six—seven-seeded. Style jointed. Seeds roundish, smooth.

DESCRIPTION, &c.—This species has pretty little flowers, which are of a reddish purple when they first expand, but which turn blue as they fade. The leaves have generally three pair of leaflets, which are oval, and drawn out to a long point. The species is a native of Switzerland and Germany, generally in groves. It was introduced in 1629. It is hardy, but it seldom ripens seeds in this country, as its flowers are produced in April, when they are frequently injured by spring frosts.

5.—*OROBUS AURANTIUS*, Stev. ORANGE-COLOURED BITTER VETCH.

ENGRAVINGS.—Swt. Brit. Flow. Gard., 2d ser. t. 198; and our fig. 7 in Plate 36.

SPECIFIC CHARACTER.—Plant pilose; stems simple; angular; leaves with 5—6 pairs of lanceolate, bluish leaflets, with diverging nerves;

peduncles elongated, shorter than the leaves; calyx piloso, with unequal teeth, four very short and one very long; legumes pedicellate (G. Don.)

DESCRIPTION, &c.—A tall slender plant, with five or six pair of broad smooth leaflets, which are the same colour on both sides, and are attenuated at both ends. The flowers are yellow, tinged with orange. The species is a native of the western regions of Caucasus, whence it was introduced in 1818. It is quite hardy, and flowers

in June and July. It should be grown in a loamy soil, and it is increased by dividing the roots or by seeds, though it ripens them but sparingly. The flowers are distinguished from those of *O. luteus*, which they resemble, by their darker colour, and the very unequal teeth of the calyx.

6.—*OROBUS ATROPURPUREUS*, *Desf.* THE DARK PURPLE OROBUS.

**SYNONYMES.**—*O. siccus*, *Raf.*; *O. Rafinesquin*, *Prest*

**ENGRAVING.**—Bot. Reg. t. 1763; and our fig. 6 in Plate 36.

**SPECIFIC CHARACTER.**—Stem nearly simple; striated

from one to several pair of linear-acuminate, glabrous leaflets. Sti-

pules semi-sagittate, somewhat one toothed. Peduncles longer than

the leaves. Racemes dense, secund, many-flowered, corollas elongated.

**DESCRIPTION, &c.**—This very elegant species is remarkable for the very rich colour of its flowers and their singular disposition. It is a native of Algiers, Sicily, and the loamy meadows of Eastern Calabria. It flowers in May. It was introduced in 1826; and it is quite hardy in British gardens.

OTHER SPECIES OF OROBUS.

*O. VARIEGATUS*, *Dec.*, *Sect. Brit. Flow. Gard.*, 2d ser. t. 28.

This species bears considerable resemblance to *O. atropurpureus*.

*O. FORMOSUS*, *Stev.*

Flowers about the size of those of *O. vernus*, but of a rich dark purple. A native of Caucasus; introduced in 1818.

*O. ALPESTRIS*, *Waldst et Kit.*

Flowers purple; the standard is veined with crimson, fading to blue. A native of Hungary; introduced in 1817.

*O. MULTIFLORUS*, *Sieb.*

A native of Italy, introduced in 1820. The flowers are of a pale red.

*O. VICIOIDES*, *Dec.*

Flowers yellow. A native of Carniola; introduced in 1819.

*O. LUTEUS*, *Linn.*

Flowers varying from orange to pale yellow. Found in mountainous places throughout the Continent of Europe; introduced in 1759.

*O. TOURNEFORTII*, *Lap.*

Flowers purple, with the wings and keel shaded off to white. A native of the Pyrenees; introduced in 1820.

*O. OCHROLEUCUS*, *Waldst et Kit.*

A native of Hungary, with cream-coloured flowers; introduced in 1816.

*O. NIGER*, *Linn.*

A British species with purple flowers. The whole plant turns black in drying.

*O. JORDANI*, *Tenore.*

A native of Italy, with blue flowers; introduced in 1830.

O. HUMILIS, *Ser.*

A dwarf plant, with purple flowers. A native of Dahuria; introduced in 1825.

O. TUBEROSUS, *Lin.*

A native of Britain, with changeable flowers and tuberous roots.

O. DIVARICATUS, *Lap.*

A native of the Pyrenees, with purplish spreading flowers; introduced in 1816.

O. PYRENAICUS, *Lin.*

A native of the Pyrenees, with large rich dark purple flowers, only one or two together; introduced in 1822.

O. VARIUS, *Sal.*, *Bot. Mag.* t. 675.

A native of Italy; introduced in 1759. The flowers have the standard rose-coloured, and the heel and wings yellowish.

O. CANESCENS, *Lin.*

A beautiful species with greyish leaves, and the flowers white, tinged with blue. A native of the Pyrenees; introduced in 1816. There are several varieties of this kind, which are made separate species by some authors.

O. ALBUS, *Lin.*, *Swt. Brit. Flow. Gard.* t. 22.

There are several varieties of this species, all with white flowers. The species is a native of Hungary; introduced in 1794.

## GENUS XVI.

PLATYSTYLIS, *Sweet.* THE PLATYSTYLIS.*Lin. Syst.* DIADELPHIA DECANDRIA.

**GENERIC CHARACTER.**—Calyx campanulate, five-eleft, the two upper lobes shortest. Corolla papilionaceous. Stamens diadelphous. Style | broad, spatulate, villous at the apex. Legumes oblong, many-seeded, seeds nearly globose. (*G. Don.*)

**DESCRIPTION, &c.**—This genus has been separated from Orobis, on account of the breadth of its style, as signified in the name.

1.—PLATYSTYLIS CYANÆA, *Sweet.* BLUE-FLOWERED PLATYSTYLIS.

**SYNONYME.**—*Orobis cyaneus*, *Stev.*

**ENGRAVINGS.**—*Swt. Brit. Flow. Gard.* t. 230; and our *fig.* 3 in *Plate 36.*

**SPECIFIC CHARACTER.**—Stem simple, striated; leaves with two—three

| pair of approximate, linear lanceolate, acute leaflets; stipules about equal in length to the petioles; peduncles few-flowered, longer than the leaves; calycine segments lanceolate, hardly the length of the tube.

| (*G. Don.*)

**DESCRIPTION, &c.**—This species has bright blue flowers when they first unfold, but they become a dark purple before they fade. The species is a native of Caucasus, and it was introduced in 1823.

## OTHER SPECIES OF PLATYSTYLIS.

P. SESSILIFLORA, *Swt.*

Flowers large, and a bluish purple. Introduced from Greece, near Athens, in 1823.

## P. STIPULACEA, G. Don.; OROBUS STIPULACEUS, Hook. Bot. Mag. t. 2937.

The flowers have a dark purple standard, light blue wings, and a dark purple keel. A native of Siberia; introduced in 1830.

All the species are very ornamental, and of easy culture in a light sandy soil.

## GENUS XVII.

## APIOS, Boërh. THE APIOS, OR VIRGINIAN EARTH-NUT.

*Lin. Syst.* DIADELPHIA DECANDRIA.

**GENERIC CHARACTER.**—Calyx campanulate, with four almost obsolete teeth, and one acute, elongated, one under the keel. Corolla papilionaceous, with a falcate linear carina, bent back upon the top of

the vexillum. Stamens diadelphous. Stipe of ovary sheathed by a little tube. Stigma emarginate. Legume many-seeded, and two-celled; the seeds intercepted by dissepiments. (G. Don.)

**DESCRIPTION, &c.**—The name of Apios is taken from *Apion*, a pear, in reference to the shape of the tuberous roots. There is only one species in the genus, which was formerly included in the genus Glycine.

## 1.—APIOS TUBEROSA, Mænch. TUBEROUS-ROOTED APIOS, OR VIRGINIAN EARTH-NUT.

**SYNONYMIS.**—*A. americanus*, Corn.; *Glycine apios*, Lin.

Flowers in axillary racemes. Bracteoles closely adpressed to the calyx,

**ENGRAVINGS.**—Bot. Mag. t. 1198; and our fig. 8 in Plate 36.

but soon falling off.

**SPECIFIC CHARACTER.**—Roots tuberous. Leaves impari-pinnate.

**DESCRIPTION, &c.**—This very elegant climber is a native of Virginia, and though frequently killed down to the root by the severity of British winters, it will shoot up again in spring, and grow to the height of ten feet or more before it flowers, which is generally in August or September. It is propagated by its tuberous roots, which are sweet and eatable, resembling those of the Jerusalem Artichoke, but they are more floury. The plant is cultivated in Germany for its tubers, which are sold in the markets. The species was introduced before 1640; but it is now rarely met with.

## GENUS XVIII.

## LUPINUS, Lin. THE LUPINE.

*Lin. Syst.* MONADELPHIA DECANDRIA.

**GENERIC CHARACTER.**—Calyx profoundly bilabiate. Corolla papilionaceous, the vexillum with reflexed sides, and the keel acuminate. Stamens monadelphous, with the tube or sheath entire, five of the anthers are smaller, rounder, and earlier, and the other five, oblong, and later. Style filiform. Stigma terminal, roundish, bearded. Legume coriaceous, oblong, compressed, obliquely torulose. Cotyledons thick, but converted into leaves at the time of germination. Herbs or sub-

shrubs with digitate leaves, constantly composed of from 5—15 leaflets, very rarely simple. Leaflets complicated before expansion, and while asleep, or through the night. Stipules adnate to the petioles. Peduncles opposite the leaves or terminal. Flowers alternate or verticillate, sessile or pedicellate, disposed in racemes and spikes, with one bractea under each pedicel, and with two bracteoles adhering laterally to the calyx, which are caducous, or wanting. (G. Don.)

**DESCRIPTION, &c.**—The name of Lupine is derived from the word *lupes*, a wolf, because a crop of lupines was formerly supposed to destroy the fertility of the soil. But this opinion is singularly at variance with the practice of the modern Italians, who sow a crop of white lupines as a preparative for Corn. It is true that the Italians do not suffer their lupines to seed, but dig the green crop into the ground as soon as it is beginning to form

flower-buds. The seeds of the lupine were eaten by the ancients, though they are so bitter, that Virgil calls them *tristes lupini*, from the dismal faces made by those who ate them. Almost all the kinds of lupine grown in gardens are ornamental, and they are of various kinds and colours. Some are annuals, some perennials, and some shrubs.

#### 1.—*LUPINUS PERENNIS*, *Lin.* THE PERENNIAL LUPINE.

ENGRAVING.—Bot. Mag. t. 202.

SPECIFIC CHARACTER.—Herbaceous; flowers alternate, pedicellate, | leaflets 8—9, lanceolate, mucronulate, rather villous beneath; root  
bracteolate; upper lip of calyx somewhat emarginate, lower one entire; | creeping. (*G. Don.*)

DESCRIPTION, &c.—This was the first perennial lupine known, and hence its name, which has now become no distinction, as so many perennial lupines are now known. This species is a native of Virginia, whence it was introduced before 1658. It was first cultivated in the Botanic Garden, Oxford, and was greatly admired, though it would now excite little attention, as its flowers are small, and of a pale blueish purple which has rather a dingy or faded look. It is quite hardy, but it succeeds best in a dry situation, in a moderately stiff loam. It has remarkably deep and spreading roots, and is best propagated by seed.

#### 2.—*LUPINUS ARBOREUS*, *Sims.* THE TREE-LUPINE.

ENGRAVINGS.—Bot. Mag. t. 682; Bot. Reg. 1838, t. 32; and our | pedicellate, without bracteoles; both lips of the calyx entire. Keel  
*fig. 3* in Plate 37. | ciliated on the inside. Leaflets lanceolate, linear, acute, pubescent  
beneath. (*G. Don.*)

SPECIFIC CHARACTER.—Suffruticose. Flowers somewhat verticillate,

DESCRIPTION, &c.—This species is, properly speaking, a shrub, but it is only woody towards the base. It was formerly treated as a greenhouse plant, but it stands out quite well, and there was some years ago a bud of it in the open ground, in the botanic garden at Oxford, more than six feet high. It seldom however lives more than two or three years, unless trained against a wall. It was introduced in 1793 from South America, but it has been since found in great abundance in California. It may be propagated by cuttings, but the first plants are raised from seeds which it ripens in abundance, and seedling plants flower the second year.

#### 3.—*LUPINUS NOOTKATENSIS*, *Sims.* THE NOOTKA-SOUND LUPINE.

ENGRAVINGS.—Bot. Mag. t. 1311, and t. 2136; and our *fig. 4* in | pedicellate, without bracteoles; both tips of calyx entire; leaflets 7—  
Plate 37. | 8, obovate-lanceolate, hairy as well as the stems. (*G. Don.*)

SPECIFIC CHARACTER.—Herbaceous; flowers rather verticillate,

DESCRIPTION, &c.—This lupine bears considerable resemblance to the common perennial lupine, but the flowers are larger, and of a deeper colour. It is quite hardy, and will grow in any soil or situation, but it is not suitable for small gardens, as it grows to a large size with coarse robust foliage. The whole plant is very hairy. The flowers vary considerably in different plants, and there is one distinct variety, the stem of which is quite shrubby. It is a native of the country near Nootka Sound, whence it was introduced in 1794. It is propagated by division of the root, cuttings, or seeds.

#### 4.—*LUPINUS POLYPHYLLUS*, *Douglas.* THE MANY-LEAVED LUPINE.

VARIETY.—L. p. 2, *albiflorus Lindl.*

ENGRAVINGS.—Bot. Reg. t. 1096, and of the variety, t. 1377.

SPECIFIC CHARACTER.—Herbaceous; flowers rather verticillate, | without bracteoles, pedicellate; leaflets eleven to fifteen, lanceolate,  
hairy beneath, both lips of calyx quite entire; stems pilose. (*G. Don.*)

DESCRIPTION, &c.—This splendid lupine is now become so common that we can hardly conceive how gardens must have looked without it, though it is not yet quite twenty years since seeds of it were first sent to this

country by Douglas. It was one of the first importations from California, that country to which we are indebted for so many valuable flowers. *Lupinus polyphyllus* is quite hardy, and will grow in any common garden soil. It attains the height of three or four feet, with a long spike of rich, dark blue flowers. The variety only differs in having the flowers white, and both come true from seed.

#### 5.—*LUPINUS ARBUSTUS*, *Doug.* THE HALF-SHRUBBY LUPINE.

**ENGRAVING.**—Bot. Reg. t. 1230.

**SPECIFIC CHARACTER.**—Flowers alternate, pedicellate, bracteolate; disposed in loose racemes; upper lip of the calyx bifid, lower one

entire, acute. Leaflets seven—thirteen, obovate-oblong, silky on both surfaces. Legumes three—four-seeded. Seeds small, white. (*G. Don.*)

**DESCRIPTION, &c.**—This very elegant species, though called half-shrubby, is a true perennial. The flowers are rather small, but of a delicate lilac, with a faint tinge of yellow, and they are disposed on the raceme in a very light and elegant manner. It is a native of North Carolina, but very local in its range, growing only in the gravelly soil near Fort Vancouver. It was introduced in 1826. It is hardy, but will only grow in gravelly soil. It flowers in May and June.

#### 6.—*LUPINUS LAXIFLORUS*, *Doug.* THE LOOSE-FLOWERED LUPINE.

**ENGRAVING.**—Bot. Reg. t. 1110.

**SPECIFIC CHARACTER.**—Plant herbaceous, pilose; flowers alternate, without bracteoles; upper lip of calyx entire; saccate at the base,

lower one longer, ovate, and acuminate; keel beardless; vexillum obcordate; leaflets seven—nine, linear-lanceolate; stipules small subulate.

**DESCRIPTION, &c.**—This species is also a native of California, where it is found near the great rapids of the Columbia River, in dry, open, gravelly plains, in large patches. The flowers are small, with the standard of a very deep blue, and the keel tinged with pink. This species grows freely in any light garden soil, where there is plenty of free air, but it does not succeed in close situations. Unlike most of the other species, it seldom ripens seeds, and it is therefore propagated by division of the root. It was introduced in 1826.

#### 7.—*LUPINUS LEPIDUS*, *Doug.* THE PRETTY LUPINE.

**ENGRAVING.**—Bot. Reg. t. 1149.

**SPECIFIC CHARACTER.**—Plant herbaceous; flowers alternate, pedicellate, without bracteoles; calyx villous, the upper lip bipartite, the

lower one acuminate and elongated; leaflets five—seven, lanceolate, silky on both surfaces; flowers bearing stems, erect, furnished with one or two leaves; petioles long. (*G. Don.*)

**DESCRIPTION, &c.**—This is a dwarf species, with pretty cheerful-looking flowers of different shades of purple, with the back of the standard and the wings almost white. The leaves are small, and on remarkably long stalks, which gives a peculiar character to the plant. It does not grow above six or eight inches high, and it is propagated by dividing the roots, as it seldom ripens seeds in this country. Like the two preceding species, it is only found in the gravelly plains between Fort Vancouver and the Great Falls of the Columbia, on the dry elevated banks of streams. It was introduced in 1826.

#### 8.—*LUPINUS ORNATUS*, *Doug.* THE ORNAMENTAL LUPINE.

**ENGRAVING.**—Bot. Reg. t. 1216.

**SPECIFIC CHARACTER.**—Herbaceous; flowers verticillate, appendiculate; upper lip of calyx bifid, lower one entire and elongated; leaflets

seven—twelve, linear-lanceolate, clothed with silvery silky down on both surfaces; legumes four—five-seeded. (*G. Don.*)

**DESCRIPTION, &c.**—This is one of the most beautiful and most singular of all the beautiful Lupines sent home by Douglas from California. The flowers are of the most lovely blue, without the slightest tinge of purple, but









so dark as to be almost black at the margin of the petals, but softening into white at the base. The leaflets are large, and covered with a silky tomentum, which makes them shine like silver in the sun. It was found by Douglas near the Columbia River, in California, and sent home by him in 1826. It is quite hardy, and flowers from May till November, but it will only grow in very light dry soils. It is propagated by dividing the root, as it seldom ripens seeds.

#### 9.—*LUPINUS LITTORALIS*, *Doug.* THE SEA-SIDE LUPINE, OR CALIFORNIAN LIQUORICE.

ENGRAVING.—Bot. Reg. t. 1198.

SPECIFIC CHARACTER.—Herbaceous; flowers verticillate, pedicellate, without bracteoles; both lips of calyx entire; leaflets five—seven,

linear-spatulate, silky on both surfaces; legumes ten—twelve-seeded, furrowed transversely; root granular.

DESCRIPTION, &c.—This species is remarkable for the deep blue of the keel, and the bright pinkish purple of the standard. It is a dwarf species, with long creeping roots. In the Botanical Register is the following quotation from Douglas's account of this plant: "This species is abundant on the sea-shore, where it binds together the loose sand with its tough branching roots. It is used by the natives of the river Columbia as winter food. For this purpose it is prepared by drawing the roots through the fire until all their moisture is dissipated, when they are tied up in small bundles, and will keep for several months. For eating, the roots are roasted in the embers, when they become farinaceous. It is the liquorice spoken of by Captains Lewis and Clarke, and other navigators, who have visited the North-west coast of America." The roots, when chewed, taste sweet, like those of the true Liquorice. "The species is a hardy perennial, flowering from June to October, and propagated by cuttings, division of the roots, or seed."

#### 10.—*LUPINUS ARIDUS*, *Doug.* THE ARID LUPINE.

ENGRAVINGS.—Bot. Reg. t. 1212; and our fig. 6 in Plate 37.

SPECIFIC CHARACTER.—Plant herbaceous, very hairy; flowers verticillate, pedicellate, bracteolate; upper lip of calyx bifid, lower one

entire; leaflets five—nine, linear-lanceolate, villous; stipules subulate.

(*G. Don.*)

DESCRIPTION, &c.—This beautiful species is said to be only found on the sandy plains of California, exposed without the slightest shelter to the rays of the burning sun. The plant in its native country is white, with long silky hairs, but in England the hairs disappear; the flowers are also much darker in this country than in America. In England also, it seldom lives above two years, as it cannot bear the moisture of our climate. It is a native of the banks of the Columbia, whence it was introduced in 1827. It is propagated by dividing the root, or by seed.

#### 11.—*LUPINUS PLUMOSUS*, *Douglas.* THE FEATHERY-PLUMED LUPINE.

ENGRAVING.—Bot. Reg. t. 1217.

SPECIFIC CHARACTER.—Plant herbaceous, very villous; flowers alternate, on short pedicels, bracteolate; upper lip of calyx bifid, lower

one entire, leaflets five—seven, lanceolate, silky; legumes glabrous,

three—five-seeded; bracteas longer than the flowers, villous, deciduous. (*G. Don.*)

DESCRIPTION, &c.—This species is a hardy perennial, common in North California, in gravelly soil. It is nearly related to *L. leucophyllus*, but it is distinguished from that species by its larger and less crowded flowers, and by its long, deciduous, and shaggy bracteæ, which project so far beyond the unopened flowers in the upper part of the raceme, as to give it the appearance of a plume of feathers. This species, which is very distinct, will only grow in very light soil, and it appears to succeed best in peat. It was introduced in 1827, and it is propagated by dividing the root, or by seeds.

12.—*LUPINUS LEUCOPHYLLUS*, *Dougl.* THE WHITE-LEAVED LUPINE.

ENGRAVING.—Bot. Reg. t. 1124.

SPECIFIC CHARACTER.—Plant herbaceous, very villous; flowers alternate, pedicellate, bracteolate; upper lip of calyx bifid, lower one

entire; leaflets seven—nine, oblong-lanceolate; stipules tubulate, woolly. (*G. Don.*)

DESCRIPTION, &c.—This very singular species is so completely covered with a silky tomentum, as to look quite white and silvery, all over, not a particle of the green surface of the leaves and stem being visible. The stem grows erect and branched, two or three feet high, like that of *Lupinus polyphyllus*. The white-leaved lupine is a native of the “woodless sandy deserts,” which extend from the Great Falls of the Columbia to the Rocky Mountains in North America, and it was sent to England in 1825. It is propagated by seeds, or by dividing the root. It flowers from June to November, and its flowers are white or pinkish.

3.—*LUPINUS SABINIANUS*, *Dougl.* MR. SABINE'S LUPINE.

ENGRAVING.—Bot. Reg. t. 1435.

SPECIFIC CHARACTER.—Herbaceous; flowers somewhat verticillate, without bracteoles; racemes many-flowered; calyx villous, with the

upper lip ovate and acute, lower one boat-shaped, revolute; wings roundish, size of vexillum; keel acute; leaflets seven—twelve, lanceolate, acuminate, silky. (*G. Don.*)

DESCRIPTION, &c.—This very showy plant has bright yellow flowers, which are produced on a raceme eight or nine inches long. It is a native of North California, growing on the banks of the Columbia, and it is quite hardy in British gardens. It is, however, a very difficult plant to manage, as very few of the seeds germinate, and the plants often die off, without any apparent cause, when they are in full flower. It flowers in May and June, but the spike frequently withers before all the flowers have expanded. It is propagated by seeds, which it ripens sparingly. It was introduced in 1827.

14.—*LUPINUS CANALICULATUS*, *Swt.* THE CHANNELLED-LEAVED LUPINE.

ENGRAVINGS.—Swt. Brit. Flow. Gard. t. 283; and our fig. 2 in Plate 37.

SPECIFIC CHARACTER.—Suffruticose. The whole plant covered with

a silky tomentum. Flowers alternate, pedicellate, bracteolate. Calyx appendiculate, with the upper lip bifid, lower one entire, acuminate. Leaflets eight—nine, linear, deeply channelled, obtuse; ovary very hairy.

DESCRIPTION, &c.—This species is remarkable for the very deep blue of its flowers. The plant itself grows four or five feet high, the stem becoming woody near the root. It is a native of Buenos Ayres, whence it was introduced in 1828. This species, and *Lupinus arboreum*, planted alternately, would have a striking effect, from the strong contrast afforded by the dark blue and bright yellow of their flowers.

15.—*LUPINUS MACROPHYLLUS*, *Benth.* THE LARGE-LEAVED LUPINE.

ENGRAVINGS.—Swt. Brit. Flow. Gard. 2d series, t. 356; and our fig. 1 in Plate 36.

SPECIFIC CHARACTER.—Perennial, hairy. Leaflets numerous, 12—

15, lanceolate acute. Flowers verticillate, very numerous, crowded. Calyx with both lips entire, lower one lanceolate, acute, and twice as long as the upper one.

DESCRIPTION, &c.—A very tall robust plant, clothed with a copious pubescence. The stem is three or four feet high, straight, and cylindrical. The leaves are on long slender footstalks, but there are from twelve to fifteen leaflets, varying from one to four inches in length in the stem leaves, but longer and broader in the root leaves. The flowers are large, and from ten to fifteen in each whorl, and the racemes are from nine inches to a foot long. It is nearly allied to *Lupinus polyphyllus*, and requires the same treatment, but it is larger in all its parts.

16.—*LUPINUS VERSICOLOR*, *D. Don*. THE PARTI-COLOURED LUPINE.

**ENGRAVINGS.**—Swt. Brit. Flow. Gard., 2d series, t. 12; and our fig. 5, in Plate 37.

**SPECIFIC CHARACTER.**—Suffruticose, erect, branched. Branches

pubescent. Leaflets six to nine; spatheolate lanceolate, obtuse, slightly mucronate. Flowers sub-verticillate. Bracts caducous, spreading, ciliated, with silky hairs. Upper lip bifid; under lip entire.

**DESCRIPTION, &c.**—This plant is quite distinct from the *Lupinus versicolor* of Dr. Lindley, figured in the Botanical Register, t. 1979. It is rather unfortunate that Dr. Lindley and Professor Don should have given the same name to different plants; but I believe, according to the usual rules of botanists, that of Professor Don will stand, as it was applied between 1828 and 1831, while Dr. Lindley's plant was not named till 1835 or 1836. Dr. Lindley's *Lupinus versicolor* is a very handsome plant, varying very much from seed, some of the plants being dark purple, and others nearly white, with all the intermediate shades. It is a native of California, and was introduced in 1836. It is quite hardy. Professor Don's *Lupinus versicolor*, (see fig. 5, in Plate 27) has small flowers and a slender stem. It is a native of Mexico, whence it was introduced in 1828. It requires protection in severe weather.

## OTHER SPECIES OF LUPINUS.

These are very numerous, but they differ chiefly in colour, as the form is nearly the same in all. The following are the most ornamental of the species.

L. LATIFOLIUS, *Agardh*; Bot. Reg. t. 1109.

A pretty little plant with reddish purple flowers, a native of California; introduced in 1833. The leaflets are rather broader than in the common kinds. It is quite hardy, and flowers from July to September.

L. MEXICANUS, *Lagasca*; Bot. Reg., t. 457.

A rather tender species with light blue flowers. Introduced from Mexico in 1819.

L. RIVULARIS, *Doug.*; Bot. Reg. t. 1595.

A pale-flowered species from California; introduced in 1833.

L. ALBIFLORUS, *Lindl.*; Bot. Reg. t. 1642.

A very singular whitish-looking plant, with glaucous leaves and nearly white flowers. A native of California; introduced in 1831.

L. VILLOSUS, *Pursh.*

This species is remarkable for its leaves being entire, and not divided into leaflets. It is a native of Carolina; introduced in 1787.

## CHAPTER XVIII.

## ROSACEÆ.

**CHARACTER OF THE ORDER.**—Calyx of five (or rarely three or four) united sepals, with a disk either lining the tube, or surrounding the orifice. Petals equal in number to the sepals; sometimes though rarely wanting. Stamens free, indefinite, rarely few, attached to the disk.

Ovaries superior, solitary or several, one-celled. Styles generally lateral. Fruit one-seeded nuts, or follicles containing several seeds. Leaves alternate; stipules large.

**DESCRIPTION, &c.**—Most of the Rosaceæ are low trees or shrubs, with ornamental flowers or fruit. The herbaceous plants have also generally large and ornamental flowers. The principal herbaceous genera in this order are *Fragaria* (the strawberry), so well known for its fruit, and *Geum*, *Siervisia*, and *Potentilla*, all remarkable for the beauty of the flowers of some of their species.

## GENUS I.

POTENTILLA, *Lin.* THE CINQUEFOIL.*Lin. Syst. ICOSANDRIA POLYGYNIA.*

**GENERIC CHARACTER.**—Calyx ten-cleft, the outer segments accessory, foliaceous, and tridentate. Petals five. Stamens numerous. Carpels numerous, dry, seated on an elevated torus. Styles lateral. (*G. Don.*)

**DESCRIPTION, &c.**—The Potentilla is very nearly allied to the strawberry, the principal difference being in the fruit, which in the strawberry is of a fine flavour and juicy, while in the Potentilla it is dry and insipid. The Potentillas have all compound leaves, like the strawberry; with the stipules adhering to the petioles. The leaves of most of the species have only three leaflets, but those of the British species have five leaflets; and hence the common English, or rather French, name of the genus, which is Cinquefoil, or five-leaved. Some of the exotic species have seven or nine leaflets. The Latin name, "Potentilla," signifies "power," from some powerful virtues attributed to this plant in medicine.

1.—POTENTILLA GRANDIFLORA, *Lin.* THE LARGE-FLOWERED POTENTILLA.

**ENGRAVING.**—*Bot. Mag.* t. 75.

**SPECIFIC CHARACTER.**—Stem ascending, few-flowered. Leaves ternate, leaflets obovate, connected at the base, deeply serrated, pilose. Stipules

large. Petals obocordate, twice the length of the calyx. Receptacle pilose. (*G. Don.*)

**DESCRIPTION, &c.**—A pretty little plant, with bright yellow flowers, which are badly named, as they are much smaller than those of several other species. This plant is a native of the mountains of Europe and Siberia. It was introduced in 1640, and it is quite hardy in British gardens, where it requires only the common treatment of hardy perennials.

2.—POTENTILLA ATROSANGUINEA, *Lodd.* THE DARK RED POTENTILLA.

**ENGRAVINGS.**—*Lodd. Bot. Cab.* t. 786; *Bot. Mag.* t. 2689; and our *fig. 2* in Plate 38.

**SPECIFIC CHARACTER.**—Stem decumbent; leaves ternate; leaflets

obovate, deeply serrated, clothed with white tomentum beneath. Petals obocordate, much longer than the calyx.

**DESCRIPTION, &c.**—This splendid Potentilla has flowers of the darkest and richest crimson. It is a native of Nepaul, whence it was introduced in 1822. It is quite hardy, and will grow in any common garden soil. It is a decumbent plant, producing its large flowers at the extremity of its shoots. Some splendid hybrids have been produced, by fertilising the seeds of other species of Potentilla with the pollen of this plant.

3.—POTENTILLA GRACILIS, *Doug.* THE SLENDER CINQUEFOIL.

**ENGRAVING.**—*Bot. Mag.* t. 2984.

**SPECIFIC CHARACTER.**—Stems erect, tall, beset with soft hairs, corymbosely panicled at the apex; leaves quinate, lower ones on long petioles, upper ones almost sessile; leaflets lanceolate, deeply and

pinnatify serrated, clothed with white tomentum beneath; stipules large, lanceolate, entire; petals obocordate, longer than the calyx, which is silky. (*G. Don.*)

**DESCRIPTION, &c.**—This is a Californian species, with golden yellow flowers, introduced by Douglas in 1826. It is quite hardy, and grows in light sandy soil nearly two feet high.

4.—POTENTILLA ERECTA, *Lin.* THE ERECT POTENTILLA.

**SPECIFIC CHARACTER.**—Stem erect, pilose. Leaves with 5—7 leaflets; leaflets oblong, deeply serrated, beset with spreading pills.

Lower stipules lanceolate, entire; upper ones broader, and jagged. Petals obocordate, exceeding the calyx. (*G. Don.*)

**DESCRIPTION, &c.**—This species is exceedingly common on the Continent, whence it was first sent to England in 1648. The flowers are pale yellow, and in terminal corymbs; and the plant grows from one foot to two feet high.

## 5.—POTENTILLA LUPINOIDES, Willd. THE LUPINE-LIKE POTENTILLA.

**SYNONYMES.**—*P. nivalis*, Pers.; *P. valdenia*, Vill.; *P. lanata*, Lam.; *P. integrifolia*, Lapeyr.

**ENGRAVING.**—Lodd. Bot. Cab. t. 654.

**SPECIFIC CHARACTER.**—Stem erect, pilose. Leaves with five or

seven leaflets; leaflets obovate, roundish, obtuse, connivently serrated at the apex, densely clothed with silky villi. Stipules large, entire. Petals obcordate, shorter than the calyx. (G. Don.)

**DESCRIPTION, &c.**—This species has white flowers, which are produced three or six together at the extremity of the branches. It is a native of the mountains of Dauphiny and the Pyrenees, whence it was introduced in 1739.

## 6.—POTENTILLA COLORATA, Lehm. THE COLOURED POTENTILLA.

**SYNONYMES.**—*P. Nepaulensis*, Hook.; *P. formosa*, D. Don.

**SPECIFIC CHARACTER.**—Stems erect, purple. Lower leaves quinate, with obovate lanceolate leaflets; upper leaves ternate, with lanceolate

leaflets. Leaflets serrated, and beset with silky incumbent pili. Stipules ovate, quite entire, sheathing. Petals obcordate, veiny, longer than the calyx. (G. Don.)

**DESCRIPTION, &c.**—The petals of this species are of a beautiful and brilliant rose-colour. It is a native of Nepaul, whence it was introduced in 1822.

## 7.—POTENTILLA HOPWOODIANA, D. Don. HOPWOOD'S POTENTILLA.

**ENGRAVINGS.**—Swt. Brit. Flow. Gard., 2d ser. t. 61; Bot. Reg. t. 1833; and our fig. 1 in Plate 38.

**SPECIFIC CHARACTER.**—Stems ascending, clothed with villi; lower leaves with 5—6 leaflets, upper one ternate; leaflets oblong cunei-

form, coarsely-toothed, hairy on both surfaces; calycine segments ovate, acuminated; petals obcordate, imbricated, longer than the calyx. (G. Don.)

**DESCRIPTION, &c.**—This very beautiful plant is a hybrid, raised by a nurseryman at Twickenham about the year 1830, between *P. formosa* and *P. erecta*: and it possesses the different colours of its two parents, both bright and clear, and yet beautifully softened into each other. This hybrid is quite hardy, and will grow in any common garden soil, though it thrives best in a warm climate, provided it has abundance of air. It is propagated by dividing the root. The flowers are generally much larger than those we have figured.

## 8.—POTENTILLA RUSSELLIANA, Sweet. RUSSELL'S CINQUEFOIL.

**ENGRAVING.**—Swt. Brit. Flow. Gard. t. 279.

**SPECIFIC CHARACTER.**—Villous; stems branched, diffuse; radical leaves petiolate, ternate, quaternate, or quinate; leaflets ovate or

obovate, obtuse, deeply serrated, feather-nerved, rather silky beneath; stipules adnate, ovate-lanceolate, acuminated; calycine segments lanceolate, acute; petals large, obcordate. (G. Don.)

**DESCRIPTION, &c.**—A very handsome hybrid, raised between *P. formosa*, with rose-coloured flowers, and *P. atropurpurea*, with dark crimson flowers. The petals are a bright scarlet, with a dark spot at the base. This plant was raised about 1827, by Mr. Russell, a nurseryman at Battersea. It is quite hardy; and it is propagated by division of the root.

## 9.—POTENTILLA MACKAYANA, Swt. MACKAY'S CINQUEFOIL.

**ENGRAVING.**—Swt. Brit. Flow. Gard., 2d ser. t. 42.

**SPECIFIC CHARACTER.**—Villous; stems ascending, branched; leaves flescid, radical ones quinate; leaflets oblong-cuneated, coarsely and

bluntly toothed; caulin leaves ternate, few-toothed; stipules ovate, acute, quite entire; petals obcordate, undulated, a little longer than the calyx. (G. Don.)

**DESCRIPTION, &c.**—This is another hybrid raised by Mr. Mackay, a nurseryman at Clapton, between *P. formosa*, which has rose-coloured flowers, and *P. opaca*, which has yellow flowers. In *P. Mackayana*, the colours are not mixed so as to make a more beautiful tint, as in *P. Russelliana*; nor softened into each other, as in *P. Hopwoodiana*; but the petals are yellow, each with a little spot of red at the base.

## OTHER SPECIES OF POTENTILLA.

These are very numerous, and they are all so ornamental that it is difficult to know which to select. The following are a few from each section :

## § 1.—LEAVES TERNATE.

*P. NIVEA*, Lin., *Bot. Mag.* t. 2982; *Lodd. Bot. Cat.* t. 460.

A native of North America, where it extends as far north as the shores of the Arctic Sea. The leaves are covered with a white down, from which it takes the name of the Snowy Potentilla, and the flowers are yellow. It was introduced in 1816. There are several species nearly allied to this, and having yellow flowers, but with green leaves.

*P. VILLOSA*, Pallas.

An American species, remarkable for the large size of its golden yellow flowers. Introduced in 1820.

*P. NITIDA*, Lin.

A very beautiful species with shining leaves, a native of Dauphiny. Introduced in 1815. The plant is only two or three inches high, and grows in tufts. The flowers are white, or of the colour of the peach-blossom.

*P. atroanguinea*, and several other species with beautiful flowers, belong to this division, but very few of them have been introduced.

## § 2.—LEAVES DIGITATE OR PINNATE.

*P. REPTANS*, Lin.

The common Cinquefoil, a British plant with small yellow flowers

*P. UMBROSA*, Stev.

A native of Russia, introduced in 1818. The petals are of a golden yellow inside and brown without.

*P. OPACA*, Lin.

A native of the northern parts of Europe and America. The flowers are yellow, disposed in a leafy corymb, and the stems purplish. It is found wild in Scotland.

*P. CROCEA*, Hall.

Flowers copper-coloured. A native of the mountains of Europe; introduced in 1816.

## GENUS II.

## GEUM, Lin. AVENS.

*Lin. Syst.* ICOSANDRIA POLYGYNIA.

GENERIC CHARACTER — Calyx ten-cleft, the five outer segments accessory. Petals five. Stamens numerous. Carpels numerous, dry, ending each in a kned style. (*G. Don.*)

DESCRIPTION, &c.—The word Geum is derived from *geuo*, to give a relish, in allusion to the roots of the common Avens, or Herb Bennet, (*G. urbanum*,) which taste like cloves, and are sometimes used for flavouring gin and other spirits. There are numerous species with yellow or reddish flowers, all more or less handsome and deserving of cultivation; but the scarlet-flowered Geum is the only one usually found in gardens. The genus Geum differs from Potentilla in each carpel having a hooked style, while those of Potentilla are straight.







*I. Gentiana spumosa* = *Gentiana utriculigera* = *Gentianella cocinea*  
Linn. var. *teretifolia*



1.—*GEUM COCCINEUM*, *Lindl.* SCARLET-FLOWERED GEUM.

**SYNONYMS.**—G. Quellyon, *Swt.*; G. Chiloense, *Balb.*

**ENGRAVINGS.**—Bot. Reg. t. 1088; *Swt. Brit. Flow. Gard.*, t. 292; and our *fig. 3.* in Plate 38.

**SPECIFIC CHARACTER.**—Radical leaves interruptedly pinnate; leaflets

crenately serrated; terminal one large, roundish, cordate, lobed and crenated; caudine leaves 3-lobed, deeply cut; stipules large, roundish, toothed. Flowers panicled, erect. Plant villous or pilose.

**DESCRIPTION, &c.**—This species is a native of the mountains of Chile, whence it was sent to Lyons, and communicated by M. Balbis of that city, to the London Horticultural Society in 1826. Though a native of Chile, it is quite hardy in British gardens, where it flowers from May till August, and ripens abundance of seeds. It thrives most in a light soil. It must be observed that this species is quite different from *G. coccineum* of the *Flora Graeca*, which is Sieversia.

## GENUS III.

SIEVERSIA, *Willd.* THE SIEVERSIA.

*Lin. Syst. ICOSANDRIA POLYGYNIA.*

**GENERIC CHARACTER.**—Calyx ten-cleft, the five outer segments accessory. Petals five. Stamens numerous. Carpels numerous, dry, ending in a feathery jointless style or awn.

**DESCRIPTION, &c.**—The genus Sieversia has been divided from Geum on account of the styles, which are long and feathery, and not hooked and naked as in Geum. There are several species, mostly natives of the north of Europe. The flowers are of a bright yellow or reddish, and they are frequently distinctly veined.

1.—*SIEVERSIA MONTANA*, *Spreng.* THE MOUNTAIN SIEVERSIA.

**SYNONYME.**—*Geum montanum*, *Linn.*

**ENGRAVINGS.**—*Flor. Cab. vol. ii. t. I*; and our *fig. 4.* in Plate 38, under the name of *S. Potentilla*.

**SPECIFIC CHARACTER.**—Stems erect, one-flowered. Stolones none. Radical leaves interruptedly pinnatifid; terminal leaflet ovate, large,

oblong, obtuse, and bluntly serrate; lateral leaflets smaller, and toothed. Cauline leaves one-lobed, and deeply toothed like the stipules. Calycine segments undivided. Petals obovate, longer than the calyx, styles spreading, very pilose. (*G. Don.*)

**DESCRIPTION, &c.**—This species is a native of the mountainous parts of Europe, and was introduced in 1597; but, notwithstanding the great length of time it has been in this country, it is rarely seen in collections. The flowers are large and of a golden yellow, and the feathery styles are very showy when the petals have fallen. The species is quite hardy, and is propagated by dividing the roots or by seeds.

## CHAPTER XIX.

## ONAGRARIÆ.

**CHARACTER OF THE ORDER.**—Tube of the calyx adhering to the ovarium; limb two to four lobed. Petals two or four, twisted in aestivation, inserted in the upper tube of the calyx. Stamens four or

eight, free. Fruit capsular, baccate or drupaceous, two or four-celled, and many-seeded. Albumen wanting. Embryo straight, with a long radicle and two short cotyledons.

**DESCRIPTION, &c.**—This order is in fact a very natural one, though it embraces a great many genera, some of which are so different from each other, as the Fuchsia and the Evening Primrose. In all, however, there are four petals and four sepals; and if only two, they may be easily separated into four. The seed-vessel is also very long and below the petals, having the appearance of a part of the peduncle. The most ornamental herbaceous plants belonging to this order are included in the genus *Onagrica*. *Onagrica* is taken from the old name of the same genus.

## GENUS I.

GENOTHERA, *Lin.* THE EVENING PRIMROSE.*Lin. Syst. OCTANDRIA MONOGYNIA.*

**GENERIC CHARACTER.**—Limb of calyx four-parted. Petals four. Capsule oblong-linear, bluntly tetragonal or clavate, four-celled. Seeds naked. (*G. Don.*)

**DESCRIPTION, &c.**—The name of *Genothenra* signifies an incentive to wine-drinking; and it alludes to the custom which formerly prevailed, of eating the roots of *Genothenra biennis* with wine, in the same manner as Olives are now. The perennial species, or true Evening Primroses, have all yellow or white flowers; and they all close their flowers during the middle of the day, opening them only when the sun has set, or the sky become cloudy. The species are all hardy, and most of them are natives of North America.

1.—*GENOTHERA BIENNIS*, *Lin.* THE BIENNIAL, OR COMMON EVENING PRIMROSE.

**ENGRAVING.**—Eng. Bot. t. 1534.

**SPECIFIC CHARACTER.**—Stem erect, branched; radical leaves oblong-lanceolate, caudine ones ovate-lanceolate, toothed, pubescent; petals hardly obovate, exceeding the stamens; lobes of stigma linear and thickish; capsule nearly cylindrical, thickest at the base; valves either entire or bifid, opening at the apex. (*G. Don.*)

**DESCRIPTION, &c.**—The flowers of this plant are large, pale yellow, and very fragrant; the stem is strong, and grows from two feet to four feet high; and the roots are tuberous and eatable. The plant is a native of North America, and hence it is sometimes called the Virginian Tree Primrose; but it is also found wild in England, particularly in Lincolnshire. It is a biennial, and is propagated by seeds.

2.—*GENOTHERA SPECIOSA*, *Nutt.* THE SHOWY EVENING PRIMROSE.

**ENGRAVING.**—Swt. Brit. Flow. Gard. t. 253.

**SPECIFIC CHARACTER.**—Plant puberulous; stem suffruticose; leaves oblong-lanceolate, attenuated at both ends, serrated, and somewhat pinnatifid, nerved, pubescent beneath; flowers subracemosae, raceme naked, at first drooping; petals obovate, angular.

**DESCRIPTION, &c.**—A very handsome species, with large white flowers, which turn red as they fade. A native of North America; introduced in 1821. The plant grows two or three feet high. It is quite hardy, and is propagated by division of the root.

3.—*GENOTHERA PALLIDA*, *Lind.* THE PALE-FLOWERED EVENING PRIMROSE.

**ENGRAVINGS.**—Bot. Reg. t. 1142; and our fig. 4 in Plate 39.

**SPECIFIC CHARACTER.**—Roots creeping; stems ascending; branched, glabrous; leaves linear-lanceolate, acuminate, quite entire or toothed, glabrous; petals retuse, crenulated, exceeding the stamens; capsules cylindrical, twisted. (*G. Don.*)

**DESCRIPTION, &c.**—A beautiful species, with white flowers, delicately tinged with pink, and slightly yellow at the base. The plant is a native of North America, and it is found in great abundance in the dry sandy soil to the west of the Rocky Mountains. It was introduced in 1826, and is quite hardy in British gardens, growing about a foot high, and flowering from June to September.

4.—*GENOTHERA TARAXACIFOLIA*, *Sweet.* THE DANDELION-LEAVED EVENING PRIMROSE.

**SYNONYMS.**—*Ge. grandiflora*, *Ruis et Pavon*; *Ge. acaulis*  $\beta$  major, *Ser.*

**ENGRAVINGS.**—Swt. Brit. Flow. Gard. t. 294; and our fig. 2 in Plate 39.

**SPECIFIC CHARACTER.**—Stem branched, elongated, procumbent; leaves

pubescent, alternate, interruptedly pinnatifid, sinuate toothed, but the apex entire; tube of flowers very long; petals large, obovate, entire, five-nerved; anthers and stigmas shorter than the corolla; capsules sessile, obovate, pubescent, tetragonal; angles winged. (*G. Don.*)

**DESCRIPTION, &c.**—This splendid species has very large white flowers, which assume a reddish hue when









they fade; and which appear to repose on the dandelion-shaped leaves, from the shortness of the stem. The plant is a native of Chili, but it is quite hardy in British gardens, where it flowers from May to August. It was introduced in 1825. It grows best in a light soil, and it is propagated by division of the root.

#### 5.—*CENOTHERA MACROCARPA*, *Pursh.* THE LARGE-FRUITED EVENING PRIMROSE.

ENGRAVINGS.—Swt. Brit. Flow. Gard. t. 5; and our fig. 1 in Plate 39.

SPECIFIC CHARACTER.—Stem simple, prostrate, downy; leaves lanceolate, quite entire, or glandularly denticulated, with the margins and

nerves covered with white silky down; petals broad, obovate; stamens arched, shorter than the corolla; lobes of stigma cylindrical, blunt; capsule large, sessile, oblong, four-winged. (*G. Don.*)

DESCRIPTION, &c.—This species is a native of the banks of the Mississippi, whence it was introduced in 1811; and it is remarkable not only for the large size of its flowers, but for the great length of the tube of its calyx, which often exceeds four inches; the pollen having this distance to descend from the stamens to the ovary, which is at the base of the tube. The plant in a natural state trails on the ground, and is thus well suited for rockwork, the flowers reposing on its large broad leaves; but it may be supported by a stick so as to grow a foot or more high. It should be grown in a light rich soil, and it may be propagated by seeds, cuttings, or division of the root.

#### 6.—*CENOTHERA GLAUCA*, *Mich.* THE GLAUCOUS-LEAVED EVENING PRIMROSE.

ENGRAVINGS.—Bot. Mag. t. 1606; and our fig. 3 in Plate 39.

SPECIFIC CHARACTER.—Plant quite glabrous, decumbent, glaucous; leaves ovate, repandly denticulated; limb of calyx longer than the

tube; petals large, obovate, erose; stamens and stigma shorter than the corolla; capsules ovate, tetragonal, thick, short. (*G. Don.*)

DESCRIPTION, &c.—This species has yellow flowers and very glaucous leaves. It is erect, and the stem grows from one to two feet high. It is a native of North America, where it is found in woods west of the Mississippi. It was introduced in 1813. It is quite hardy in British gardens, where it flowers from June to October. It is propagated by seeds or division of the root.

#### 7.—*CENOTHERA ANISOLOBA*, *Swt.* THE ERECT LARGE EVENING PRIMROSE.

ENGRAVINGS.—Swt. Brit. Flow. Gard. 2d ser. t. 105; Bot. Reg. t. 1479.

SPECIFIC CHARACTER.—Stem suffruticose, tall, straight, branched, downy. Radical leaves elliptic, entire, or few-toothed; middle ones

elliptic, sharply toothed, with the segments at the base variable, linear, acute, and divaricating; upper ones unequal, pinnatifid. Tube of the flower very long. Ovary tetragonal. Petals large, imbricate, with crenulated margins.

DESCRIPTION, &c.—The root of this species is fusiform and fleshy. The stem is erect, and woody at the base, growing to a considerable height, sometimes as much as three feet. The leaves are hairy on both sides, and very irregular in their shape. The flower is large and white, but it turns red in dying. The plant is a native of Chili, whence it was introduced in 1828. If the seeds are raised on a hotbed, it will flower the first year.

#### 8.—*CENOTHERA CORDATA*. THE HEART-LEAVED CENOTHERA.

SYNONYME.—*CE. bifrons*, *D. Don.*

ENGRAVINGS.—Swt. Brit. Flow. Gard., 2d ser. t. 386; and our fig. 5 in Plate 39, under the name of *CE. bifrons*.

SPECIFIC CHARACTER.—Stem erect, branching, hairy. Upper leaves cordate; stem clasping, denticulate, pubescent. Petals obovate, obtuse crenulate. Capsules cylindrical, and covered with bristly hairs.

DESCRIPTION, &c.—This species strongly resembles the common Evening Primrose; but it differs in the petals being crumpled, its leaves cordate, and its capsules covered with bristly hairs. The species is a native of Texas, whence it was introduced in 1838. It was called *CE. bifrons* by Professor Don, who described it in Sweet's British Flower-Garden; but as that name was previously given to another species by Dr. Lindley, I have thought it best to call it *CE. cordata*, in allusion to its heart-shaped leaves.

## OTHER SPECIES OF CENOTHERA.

CE. MURICATA, *Lin.*

The stems of this species are covered with reddish warts. The flowers are yellow. The plant grows three or four feet high. It is a native of Canada, whence it was introduced in 1789.

CE. ELATA, *H. B. et Knuth.*

This species grows more than six feet high, and has pale yellow flowers. It is a native of Mexico, and was introduced in 1826.

CE. SUAVEOLENS, *Desf.*

A native of North America, with yellow, sweet-scented flowers.

CE. SIMSIANA, *Ser.*, CE. CORYMBOSA, *Sims, Bot. Mag.* t. 1974.

A very handsome species, with large corymbs of bright yellow flowers. A native of Mexico, introduced in 1816.

CE. NOCTURNA, *Jacq.*

A native of the Cape of Good Hope, introduced in 1790. The flowers are yellow, but change to red in dying.

CE. LONGIFLORA, *Jacq.*

A biennial; remarkable for the great length of the tube of the flower. A native of Buenos Ayres, introduced in 1776. It grows five feet high.

CE. ODORATA, *Jacq.*; CE. UNDULATA, *Ait.*; ONAGRA UNDULATA, *Manch. Bot. Mag.* t. 2403; *Bot. Reg.* t. 147.

A native of Patagonia; introduced by Sir Joseph Banks in 1790. It has yellow fragrant flowers, a succession of which appears during the whole summer, and it ripens abundance of seed. It grows about two feet high, and has undulated leaves.

CE. CÆSPITOSA, *Sims, Bot. Mag.* t. 1593.

A beautiful species, with fragrant white flowers, which turn pink in dying. The tube of the flower is very long. A native of North America, introduced in 1811.

CE. FRUTICOSA, *Lin.*; *Bot. Mag.* t. 332.

This is the common Tree Primrose of the old writers; but notwithstanding its name, it is perfectly herbaceous. It is a native of Virginia, and was introduced in 1739.

CE. PUMILA, *Lin.*, *Bot. Mag.* t. 355.

A very pretty little plant, growing about a foot high, with small yellow flowers. A native of North America, introduced in 1757. There are many other species, but the above are the most distinct.

## CHAPTER XX.

## PORTULACEÆ.

CHARACTER OF THE ORDER.—Calyx of two sepals. Petals five. | Capsules opening by three valves, or by a kind of lid. Placenta variable, perigynous. Anthers appendiculate. Style one. | central. Seeds winged.

DESCRIPTION, &c.—This order consists chiefly of fleshy-leaved plants with small flowers, but some of the annual species have flowers of great brilliancy and beauty. The only genus which contains ornamental perennial plants, is Claytonia. The name of the order, Portulaceæ, signifies “to carry milk,” from some of the plants contained in it having a milky juice.

## GENUS I.

CLAYTONIA, *Lin.* THE CLAYTONIA.*Lin. Syst. PENTANDRIA MONOGYNIA.*

**GENERIC CHARACTER.**—Sepals two, permanent. Petals five, un- | trifid at the apex; lobes stigmatose inside. Capsule one-celled, three-guiculated; claws connate at the base. Stamens five. Style one, | valved, three-seeded. (*G. Don.*)

**DESCRIPTION, &c.**—This genus was named in honour of Dr. John Clayton, who collected the plants for the Flora Virginica of Gronovius. The stalks and leaves of these plants are less succulent than those belonging to most of the other genera of the order, and the flowers are white or rose-coloured. All the perennial Claytonias have tuberous roots.

1.—CLAYTONIA VIRGINIANA, *Lin.* THE VIRGINIAN CLAYTONIA.

**ENGRAVINGS.**—*Swt. Brit. Flow. Gard.* 2d sor. t. 163; and our *fig.* 2 in Plate 40.

**SPECIFIC CHARACTER.**—Leaves all narrow, linear, obsoletely three-

nerved, with anastomosing veins; radical ones very few; racemes solitary, nodding; pedicels elongated; lower ones bracteate; petals emarginate. (*G. Don.*)

**DESCRIPTION, &c.**—This very elegant little plant has a large tuberous root, producing many flower-stems, and abundance of leaves, which are smooth and glossy, of a dark green above, and paler beneath. It is a native of North America, where it is found in moist woods. It was introduced in 1768. It should be grown in peat soil, and it may be increased either by seeds, or dividing the root.

2.—CLAYTONIA CAROLINIANA, *Michx.* THE CAROLINIAN CLAYTONIA.

**SYNONYMES.**—*C. spathulæfolia, Salis.*; *C. Virginica, var. Spathulæfolia, Dec.*

**ENGRAVINGS.**—*Swt. Brit. Flow. Gard.* t. 208; and our *fig. 2* in Plate 40.

**SPECIFIC CHARACTER.**—Root tuberous; radical leaves subspatulate; cauline ones oblong; racemes solitary, nodding; pedicels elongated; lower ones bracteate; petals obovate, somewhat emarginate; sepals very blunt. (*G. Don.*)

**DESCRIPTION, &c.**—This species is more rare than the preceding one, and it is less elegant. It requires the same treatment. It is a native of North America, whence it was introduced in 1789.

## OTHER SPECIES OF CLAYTONIA.

C. GRANDIFOLIA, *Swt. Brit. Flow. Gard.* t. 216.

A plant with the habit of *C. Virginica*, but with larger flowers. A native of North America, introduced in 1789.

C. ACUTIFLORA, *Swt.*; C. VIRGINICA, *Bot. Mag.* t. 941.

Remarkable for its pointed lanceolate petals. Introduced from North America, before 1759.

## CHAPTER XXI.

## CRASSULACEÆ.

**CHARACTER OF THE ORDER.**—Calyx many-parted. Petals equal in number to the divisions of the calyx. Stamens equal in number to the petals, or double the number. Ovaries one-celled, tapering into

one stigma each. Seeds attached to the margin of the suture, in two rows, variable in number.

**DESCRIPTION, &c.**—The plants contained in this order are all fleshy, and succulent in their stems and leaves, the latter being entire or pinnatifid, without stipules. The flowers are usually showy, and produced in the kind

of heads called cymes. "These plants," says Mr. Don, "are found in the driest situations, where not a blade of grass nor a particle of moss can grow; on naked rocks, hot sandy plains, and old walls, alternately exposed to the heaviest dews of night, and the fiercest rays of the sun." They derive scarcely any nourishment from the soil, being furnished with innumerable pores, which absorb moisture during the night. The name of Crassulaceæ is derived from *crassus*, in allusion to the succulent nature of the leaves and stems.

### GENUS I.

#### SEDUM, *Lin.* THE STONECROP.

##### *Lin. Syst.* DECANTRIA PENTAGYNYIA.

GENERIC CHARACTER.—Calyx five-parted; sepals ovate, usually turgid, leaf-formed. Petals five, generally spreading. Stamens ten. Nectariferous scales entire, or hardly emarginate. Carpels five. (*G. Don.*)

DESCRIPTION, &c.—The name of Sedum, which signifies "to sit upon," expresses the habit of this plant, which appears in fact only to sit or rest upon the stones or rocks on which it grows. The same habit explains the English name of Stonecrop. Most of the species are quite hardy, and succeed perfectly well on rockwork in the open air. When grown in the border, it should be in very light sandy soil, or the soil where they grow should be mixed with loam and brick rubbish.

#### 1.—SEDUM TERNATUM, *Michx.* THE TERNATE-LEAVED STONECROP.

SYNONYMS.—*S. portulacoides*, *Willd.*; *S. deficiens*, *Don*; *S. Americanum*, *Herb.*, *Bauh.*; *S. octagonum*, *Hort.*; *Anacamptos ternata*, *Haw.*

ENGRAVINGS.—Bot. Mag. t. 1977; Bot. Reg. t. 142; and our fig. 4 in Plate 40.

DESCRIPTION, &c.—This species is a native of North America, whence it was introduced by Sir Joseph Banks in 1789. It is admirably adapted for rockwork, as it forms a large thick tuft, with stems about four inches high; and it is covered with flowers, which begin to appear in June, and continue during the whole summer. It is quite hardy in the open garden, if grown in a dry situation and a sandy soil; and it looks very well in pots or boxes, if not kept too moist.

#### 2.—SEDUM SEMPERVIVOIDES, *Fisch.* THE HOUSEEEK-LIKE STONECROP.

ENGRAVINGS.—Bot. Mag. t. 2474; and our fig. 3 in Plate 40.

SPECIFIC CHARACTER.—Leaves spatulate-ovate, acute, flat, quite entire, pubescent; lower ones collected into a circle; caudine ones

SPECIFIC CHARACTER.—Leaves flat, glabrous, quite entire; lower leaves obovate, attenuated at the base, three in a whorl, upper ones sessile, lanceolate, inordinate; cymes trifid; flowers sessile along the branches; petals oblong, acute. (*G. Don.*)

DESCRIPTION, &c.—A very hardy and handsome plant, closely resembling the houseleek when not in flower. It is a native of Mount Caucasus, whence it was introduced about 1823. It may be planted either in the open border or on rockwork; and it flowers from June to September.

#### 3.—SEDUM CERULEUM, *Vahl.* THE BLUE-FLOWERED STONE-CROP.

SYNONYME.—*S. azureum*, *Dess.*; Barbary Stonecrop.

ENGRAVINGS.—Bot. Reg. t. 520; Bot. Mag. t. 2224; and our fig. 5 in Plate 40.

SPECIFIC CHARACTER.—Stem flat on the ground at the base, ascending; leaves oblong, alternate, obtuse, loosened at the base; cymes bifid, glabrous; petals seven, obtuse. (*G. Don.*)

DESCRIPTION, &c.—This curious little plant has, notwithstanding its name, pinkish flowers, but they have the remarkable property of becoming of a brilliant blue when dry. It is a native of Barbary, whence it was introduced in 1819. It is quite hardy, and only requires to be kept dry, and grown in sand.









## OTHER SPECIES OF SEDUM.

These are so very numerous, that I can only give a few of the most remarkable.

S. AIZOON, *Lin.*

The Yellow Orpine. A native of Siberia, introduced in 1757.

S. SPHERICUM, *Bieb.*; *Bot. Mag.* t. 2370.

A very beautiful little plant, very unlike a Sedum, with bright pink flowers. A native of ~~Caucasus~~, introduced in 1822.

S. OPPOSITIFOLIA, *Sims*; *Bot. Mag.* t. 1807.

A very handsome species, with white flowers and toothed leaves. Its native country and year of introduction are unknown.

S. POPULIFOLIUM, *Lin.*; *Bot. Mag.* t. 211.

This is the only hardy Sedum with a shrubby stalk. It is a native of Siberia, whence it was introduced in 1780.

S. ANACAMPSEROS, *Lin.*; *Bot. Mag.* t. 118.

The Evergreen Orpine. A very singular plant; a native of the south of France, introduced before 1597. The leaves are glaucous, and the flowers pink.

All the Sedums may be propagated by cuttings, or by dividing the roots in autumn, as they very rarely ripen seed.

## CHAPTER XXII.

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SAXIFRAGACEÆ.

**CHARACTER OF THE ORDER.**—Calyx either superior or inferior, 4 or 5-lobed. Petals five, or wanting, inserted between the lobes of the calyx. Stamens 5—10. Ovary consisting of two or five carpels. Style none; stigmas sessile on the tips of the lobes of the ovary. Seeds numerous, very minute.

**DESCRIPTION, &c.**—The most popular genera in this order are *Hydrangea* and *Saxifraga*; the former, however, contains only shrubs, and is therefore unsuitable to the present work. The genus *Saxifraga* is a very extensive one, and though it has been divided by several authors, the new genera which have been formed from it do not seem likely to be generally adopted. The name *Saxifraga* signifies “break-stone,” in allusion to the medicinal properties of some of the species.

## GENUS I.

SAXIFRAGA, *Lin.* THE SAXIFRAGE.*Lin. Syst.* DECANTRIA DIGYNIA.

**GENERIC CHARACTER.**—Calyx either superior or inferior, of four or five sepals, which cohere more or less at their base. Petals five or wanting, inserted between the lobes of the calyx. Stamens 5—10, inserted either into the calyx or beneath the ovary; therefore they are either perigynous or hypogynous; anthers 2-celled, bursting lengthwise. Disk either hypogynous or perigynous, sometimes obsolete, sometimes

annular and notched, rarely consisting of five scales. Ovary inferior, or nearly superior, usually consisting of two or five carpels or follicles, cohering more or less on the inner side, but distinct at the apex; sometimes 2-celled, with a central placentæ; sometimes 1-celled, with parietal placentæ, rarely 4—5-celled. Styles none; stigmas sessile on the tips of the lobes of the ovary. (*G. Don.*)

**N, &c.**—Perennial plants, with thick woody roots, and large fleshy leaves. The flowers are showy, and they are generally disposed in thyrsoid panicles.

1.—SAXIFRAGA CRASSIFOLIA, *Lin.* THE THICK-LEAVED SAXIFRAGE.SYNONYME.—*Megasea crassifolia*, *Haw.*

ENGRAVINGS.—Bot. Mag. t. 196; and our fig. 1 in Plate 41.

SPECIFIC CHARACTER.—Leaves oval or obovate, very blunt, glabrous, serrated, oblong. Petals elliptic. (*G. Don.*)

DESCRIPTION, &c.—Mr. Curtis, in the *Botanical Magazine*, when describing this plant, observes that “the term *grandifolia* would have been more applicable to it than *crassifolia*, as it is not distinguished for the thickness so much as the largeness of its leaves.” The leaves are indeed nearly the size of those of the Dock; of a fine green on the upper surface, and red below. The flower-stem rises two or three feet high, according to the richness and moisture of the soil in which it grows. The flowers appear in April or May, and may be shielded by a hand-glass from the cold, if sharp winds should prevail, or the nights prove frosty. The plant is a native of Siberia, whence it was introduced in 1765, by Dr. Solander. It is easily increased by dividing the root in spring or autumn.

2.—SAXIFRAGA LIGULATA, *Wall.* THE LIGULATE OR NEPAUL SAXIFRAGE.SYNONYME.—*S. Pacumbis*, *Buch.*; *Megasea ciliata*, *Haw.*; Fringed leaved Saxifrage.

ENGRAVINGS.—Swt. Brit. Flow. Gard, t. 59; Lodd. Bot. Cab. t. 747; and our fig. 2 in Plate 41.

SPECIFIC CHARACTER.—Leaves obovate, subcordate, denticulated, quite glabrous on both surfaces, but ciliated on the margins. Panicle dichotomous. Petals broad, orbicular. (*G. Don.*)

DESCRIPTION, &c.—This very handsome species has the flowers large, bell-shaped, and nearly white. The leaves are large, leathery, dotted all over with small punctures, and fringed at the margin with a border of fine short hairs. The root is horizontal and woody. The species is a native of Nepaul, whence it was introduced in 1822. It should be grown in very rich garden soil, and may be protected from cold winds or frost like the preceding species. It differs from *S. crassifolia* in its facility of propagation; as it can only be increased slowly by suckers for the roots.

## OTHER SPECIES OF SAXIFRAGA.

*S. CORDIFOLIA*, *Curtis.*

A native of Siberia, with cordate leaves; closely allied to *S. crassifolia*. Introduced in 1779.

*S. UMBROSA*, *Lin.* ROBERTSONIA UMBROSA, *Haw.*

London Pride. A well-known species, a native of England and Ireland, and many parts of the Continent.

*S. STELLARIS*, *Lin.*; and our fig. 4 in Pl. 41.

A pretty little plant, a native of the north of Europe and America, and found wild in Scotland.

*S. GRANULATA*, *Lin.*

The Meadow Saxifrage. A well-known British plant, with white flowers; common in the sandy soils of England.

*S. OPPOSITIFOLIA*, *Lin.*; and our fig. 3 in Plate 41.

This species is common throughout the whole of the north of Europe; and it is found in great abundance on the Welsh and Scotch mountains; also on hills in Yorkshire. It grows in short tufts, but is extremely beautiful, from the great abundance of its large purple flowers.

There are above a hundred and fifty other species of Saxifrage, but those above-mentioned are the kinds most frequently met with.







1 *Saxifrage rosifolia* 2 *Saxifrage ligulata* - 3 *Saxifrage ap. subcordata* - 1 *Saxifrage stellaris*



## CHAPTER XXIII.

## RUBIACEÆ.

**CHARACTER OF THE ORDER.**—Tube of the calyx adhering to the ovary; limb variable; lobes equal in number to the petals. Corolla gamopetalous, inserted in the calyx; usually with a 4 or 5-lobed limb; the lobes twisted or valvate in aestivation. Stamens equal in number

to the segments of the corolla; alternating with them, and more or less adnate to its tube. Ovary usually two or many celled; crowned by a fleshy urceolus, or the limb of the calyx.—Style one; stigmas usually two, distinct. (G. Don.)

**DESCRIPTION, &c.**—This is a very interesting order, from its containing the Cinchona or Peruvian-bark, and the Coffee. It also contains many beautiful and well-known stove plants, the Madder, and the fragrant weed called Woodruff. Most of the species, however, require a stove in England; and of the hardy kinds the greater number are British weeds. The order is divided into twelve tribes, and contains above two hundred and twenty genera; out of which only six or seven genera contain hardy plants, and only one genus, *Crucinella*, hardy plants sufficiently ornamental for cultivating in a garden. *Rubiaceæ* is from *rubeus*, signifying red; from the colour of some of the roots.

## GENUS I.

CRUCINELLA, *Lin.* THE CROSSWORT.

*Lin. Syst.* TETRA-PENTANDRIA MONOGYNIA.

**GENERIC CHARACTER.**—Limb of calyx none. Corolla tubular, elongated, funnel-shaped, 4 or 5 lobed; lobes usually drawn out into a bristle-like inflated appendage. Stamens 4—5, enclosed. Style 2-lobed at the apex. Fruit bipartite, not crowned. (G. Don.)

**DESCRIPTION, &c.**—Most of the species are annuals. The name of *Crucinella* is from *crux*, a cross, in allusion to the leaves being placed crosswise. The flowers are produced in heads or spikes, and are generally white or pinkish. The only ornamental species is *Crucinella stylosa*, and this plant Dr. Lindley thinks is not a true *Crucinella*.

1.—CRUCINELLA STYLOSA, *Trin.* THE LONG-STYLED CRUCINELLA, OR CROSSWORT.

**SYNONYME.**—*Laxmania fasciculata*, *Gmel.*

**ENGRAVINGS.**—Bot. Reg. 1838, t. 55; Flor. Cab. vol. xii, p. 147; and our fig. 6 in Plate 42.

**SPECIFIC CHARACTER.**—Plant procumbent. Leaves 8—9, in a whorl, hispid, as are the stems. Heads terminal, pedunculate. Flowers pentamerous; style clavate, much exserted, bifid at the apex. (G. Don.)

**DESCRIPTION, &c.**—This very pretty and lively-looking plant is a native of Persia, where it grows naturally on rocks in the most barren places. It was introduced in 1837, and it has already become such a favourite that few gardens are now without it. The stems are square and somewhat viscid, and the leaves are in whorls. The flowers are in dense heads, and they continue in beauty nearly all the summer. The plant is quite hardy, and it is propagated by seeds or dividing the root. It should have a pure air and sandy soil.

## CHAPTER XXIV.

## VALERIANEÆ.

**CHARACTER OF THE ORDER.**—Tube of the calyx adnate to the ovary; limb variable. Corolla tubularly funnel-shaped, usually 5-lobed. Stamens adnate to the tube of the corolla, but free at the apex, varying in number from one to five. Style filiform; stigmas two or three, free, or combined in one. Fruit membranaceous or subnucamentaceous, indehiscent; sometimes 3-celled with two of the cells vacant, and sometimes 1-celled. (G. Don.)

**DESCRIPTION, &c.**—The principal plants included in this order are the Lamb's Lettuce, and those formerly

known by the general name of Valerian. The genus *Valeriana* is now, however, divided into three or four new genera. The name of the genus is derived from "Valerian," signifying "a cure," from the medicinal properties of the common Valerian (*V. officinalis*).

### GENUS I.

#### PATRINIA, *Juss.* THE PATRINIA, OR YELLOW VALERIAN.

##### *Lin. Syst.* TETRANDRIA MONOGYNIA.

**GENERIC CHARACTER.**—Limb of calyx truncate or erect, very short, somewhat 5-toothed. Corolla regular, spurless, bluntly 5-lobed. Stamens five, adnate to the bottom of the tube of the corolla, rarely five. | Stigma trigonal-capitata. Capsule 3-celled, crowned by the limb of the calyx, usually having chaff-formed bracteas adhering to it at the base, with one of the cells fertile, and two usually thick. (*G. Don.*)

**DESCRIPTION, &c.**—All the species of this genus were formerly included in the genus *Valeriana*, but they are all easily distinguished from the true Valerians by their flowers, which are of a golden yellow. The genus was formed by Jussieu, who named it *Patrinia*, in honour of M. Patrin, a traveller and collector of plants in Siberia. All the species are quite hardy.

##### 1.—PATRINIA SIBERICA, *Juss.* THE SIBERIAN PATRINIA.

**SYNONYMES.**—*P. coronata*, *Fisch.*; *Valeriana Siberica*, *Lin.*; *V. S. humilis*, *Gmel.*; *V. Ruthenica*, *Willd.*; *Fedia Siberica*, *Vahl.*; *Valerianella lutea*, *Moench.*

**ENGRAVING.**—Bot. Mag. t. 2325.

**SPECIFIC CHARACTER.**—Stem beset with two rows of hairs; leaves

rather fleshy; primordial ones oblong, lanceolate or spatulate, undivided and obtuse, entire, toothed, serrated, or pinnatifid towards the apex; caudine leaves pinnate, with entire, usually obtuse segments; fruit adnate to the palea. (*G. Don.*)

**DESCRIPTION, &c.**—A pretty little plant, with close clusters of small golden yellow flowers, and partially pinnatifid leaves. It is a native of the Altai Mountains, whence it was introduced in 1751. It flowers in May and June. The root is black and strong-scented.

##### 2.—PATRINIA RUPESTRIS, *Juss.* THE ROCK PATRINIA.

**SYNONYMES.**—*Valeriana Siberica*, *Willd.*; *Fedia rupestris*, *Vahl.* | **ENGRAVINGS.**—Bot. Mag. t. 714; and our fig. 5 in Plate 42, under the name of *Valeriana Siberica*.

**SPECIFIC CHARACTER.**—Stem smoothish or rather downy; leaves membranous, pinnatifid, with lanceolate segments; terminal segments large; corymbs subumbellate; fruit adnate to the palea. (*G. Don.*)

**DESCRIPTION, &c.**—This plant does not possess a peculiar Jasmine-like odour, which is very conspicuous in the preceding species, but in all other respects it is very nearly allied to it. It varies considerably in the leaves, like all the other species of the genus. It is a native of Siberia, whence it was introduced in 1801, and it is quite hardy in British gardens. It is generally propagated by seeds, which it ripens in abundance.

#### OTHER SPECIES OF PATRINIA.

##### *P. INTERMEDIA*, *Ram. et Schultes.*

A native of Siberia and China, introduced in 1820.

##### *P. SCABIOSÆFOLIA*, *Link.*; *Swt. Brit. Flow. Gard.*, t. 154; *Lodd. Bot. Cab.* t. 1340.

The flowers are very small. The species is a native of Dalecarlia, whence it was introduced in 1823. It grows best in a dry situation, as too much moisture rots the roots.

##### *P. CERATOPHYLLA*, *Hook.*

A native of North America, with white flowers and horny leaves. The roots are thick and fusiform, like those of a carrot, and during the spring months they are collected by the Indians, who bake them on heated stones and use them as food. In a raw state the roots are bitter, and are said to be pernicious.

## GENUS II.

CENTRANTHUS, *Dec.* THE SPURRED VALERIAN.*Lin. Syst.* MONANDRIA MONOGYNIA.

**GENERIC CHARACTER.**—Limb of calyx involute when the flower is in blossom, but afterwards it unfolds into a deciduous pappus, composed of many plumose bristles. Corolla with an obconical tube, which is spurred at the base, and a regular 5-lobed limb. Stamen 1. (*G. Don.*)

**DESCRIPTION, &c.**—This genus has been divided from Valeriana on account of the spur at the base of the flower, which is in fact very conspicuous. Centranthus signifies literally Spurred-flower. The species are all natives of Europe, growing generally in chalky soil. They are mostly erect, perennial plants, with erect stems, entire leaves, and the flowers, which are either red or white, produced in corymbose panicles. They are all quite hardy, and change very little from cultivation.

1.—CENTRANTHUS RUBER, *Dec.* THE RED-FLOWERED SPURRED VALERIAN.

**SYNONYMES.**—*C. maritimus*, *Gray*; *C. latifolius*, *Desf.*; *Valeriana rubra*, *Lin.*

**ENGRAVINGS.**—Eng. Bot. t. 1531; 2d ed. t. 37; and our fig. 4 in Plate 42, under the name of *Valeriana rubra*.

**SPECIFIC CHARACTER.**—Leaves ovate or lanceolate; upper ones unequal at the base, toothed a little; spur one half shorter than the tube, and much longer than the ovary; stamens and pistil exceeding the corolla but a very little. (*G. Don.*)

**DESCRIPTION, &c.**—This species is well known to every one who has visited Greenhithe or Gravesend, as nothing can exceed the splendid masses it forms on the chalk cliffs in that vicinity. It is, in fact, one of the handsomest of the British wild flowers; though it does not display half its beauty when grown on any but a calcareous soil. The root is sweet-scented, and the stem is somewhat shrubby at the base. There is one variety with narrow leaves, and another with white flowers.

2.—CENTRANTHUS LONGIFLORUS, *Dec.* THE LONG-FLOWERED SPURRED VALERIAN.

**SYNONYME.**—*C. angustifolius*, *Bieb.*

**SPECIFIC CHARACTER.**—Leaves lanceolate, linear, quite entire. Spur of corolla about equal in length to the tube, and about twice the

length of the ovary. Stamens and pistil twice the length of the limb of the corolla. (*G. Don.*)

**DESCRIPTION, &c.**—This species is a native of Armenia and Persia, introduced in 1817. It is remarkable for the length of the corollas of its flowers, some of which are more than an inch long. The flowers are red. The plant should be grown in a sandy or calcareous soil; and it is propagated by seeds (which it ripens freely) or division of the root.

3.—CENTRANTHUS ANGUSTIFOLIUS, *Dec.* THE NARROW-LEAVED SPURRED VALERIAN.

**SYNONYMES.**—*Valeriana rubra* *§ Lin.*; *V. angustifolia*, *Cav.*; *V. monandra*, *Vill.*

**SPECIFIC CHARACTER.**—Leaves linear-lanceolate, quite entire. Spur

one half shorter than the tube of the corolla, and about equal in length to the ovary. Stamens and pistil projecting considerably.

**DESCRIPTION, &c.**—This is the Spurred Valerian of France and Switzerland, where it grows on chalky cliffs and rocky places. The flowers are red, but their corollas are only half an inch long. The species was introduced in 1759.

There is another perennial species called *C. vernosum*, with white flowers, a native of Corsica, not yet introduced; and one annual species.

## GENUS III.

## VALERIANA, Neck. THE VALERIAN.

*Lin. Syst. TRIANDRIA MONOGYNIA.*

**GENERIC CHARACTER.**—Limb of calyx involute in the time of blossom, but it unfolds itself at last into a deciduous pappus, which is composed of many plumose bristles. Corolla, with an obconical or cylindrical tube, which is equal at the base or gibbous, but not spurred, with a bluntly five-cleft limb, rarely three-cleft. Stamens three. (G. Don.)

**DESCRIPTION, &c.**—The common Valerian (*V. officinalis*) is well known for its medicinal properties, and the fondness cats have for the smell of its roots; it is not, however, sufficiently ornamental to be worth cultivating as a garden-flower. Of the other species, though they amount to nearly a hundred in number, the only one common in British gardens is *V. dioica*, the common Marsh Valerian.

1.—VALERIANA DIOICA, *Lin.* THE DICOCIOUS, OR MARSH VALERIAN.**SYNONYMES.**—*V. sylvestris*, Gray.

**SPECIFIC CHARACTER.**—Plant glabrous, erect. Stems striated. Radical leaves petiolate ovate, or subpatulate, undivided; caulinæ leaves pinnatifid, with linear oblong lobes. Flowers dicocious, corymbs of the male flowers loose, of the female ones contracted; lobes of stigma almost combined. Fruit glabrous. (G. Don.)

**DESCRIPTION, &c.**—This plant is a native of Britain, growing freely in chalky soils, and flowering abundantly. It never thrives unless there is a degree of moisture in the soil.

## CHAPTER XXV.

## DIPSACEÆ.

**CHARACTER OF THE ORDER.**—Calyx adherent, with a variable limb. Corolla monopetalous, inserted near the top of the calycine tube, usually unequal, four or five cleft. Stamens four, epipetalous. Style one, simple. Fruit indehiscent, membranous, or submentaceous, one-celled, one-seeded, crowned by the limb of the calyx. Seed pendulous, albumen fleshy. (G. Don.)

**DESCRIPTION, &c.**—Very few plants are included in this order, but they are very interesting ones. The principal is the Teazel, or Clothier's Brush (*Dipsacea*), but that plant possesses no beauty to render it deserving of cultivation. The order itself was formerly included in Valerianaceæ; but it differs widely from that order, and agrees much more nearly with Compositæ, as the florets grow in heads on a common receptacle. The plants belonging to Dipsaceæ, however, differ from the Compositæ in having distinct stamens and pendulous albuminous seeds. Each flower has also a separate involucel, which has the appearance of a second calyx. *Scabiosa* is the most ornamental genus.

## GENUS I.

MORINA, *Tournefort.* THE MORINA.*Lin. Syst. DIANDRIA MONOGYNIA.*

**GENERIC CHARACTER.**—Involucel monophyllous, tubularly campanulate, destitute of indentations spinously dentate on the margin. Calyx Corolla ringent, with a long tube. Stamens two or four. Stigma petately capitate. Fruit crowned with the lobes of the calyx, and with an ovate tube, limb leafy two-cleft, lobes oblong entire, two-cleft. girded with the involucel.

**DESCRIPTION, &c.**—Only two species of this genus are known; *M. Pernia*, introduced in 1740, but long lost; and *M. longifolia*, a native of the mountains of the north of India, introduced in 1838. This last is a hardy perennial, growing two or three feet high, and flowering freely from July till the end of autumn. Its habit of









growth resembles that of *Acanthus mollis*, but the flowers somewhat resemble those of *Verbena Tweediana*, only they are larger and produced in whorls round the stem. The large size of the calyx and involucres, when combined with the comparatively small size of the flowers, gives this plant a coarse and weedy appearance.

## GENUS II. SCABIOSA, *Lin.* THE SCABIOUS.

*Lin. Syst. TETRANDRIA MONOGYNIA.*

**GENERIC CHARACTER.**—Involucrum of many leaves. Receptacle chaffy. Involucels usually subcylindrical. Limb of calyx attenuated into a neck at the base, and ending in five-awned bristles. Flowers aggregate, upon a receptacle. Corolla four or five cleft. Stamens four. (*G. Don.*)

**DESCRIPTION, &c.**—The plants belonging to this genus have all showy flowers, which differ from those of *Morina*, in being produced in heads or masses on a flat receptacle like the daisy, instead of being in whorls round the stem. They also show very little of the calyx and involucels. The genus was formerly very extensive; but modern botanists have separated from it two genera, which they call *Ptero-cephalus* and *Cephalaria*, the Feathered Scabious being the type of the one, and the Siberian Scabious of the other. There are above fifty species of Scabious, but only two or three are common in gardens.

### 1.—SCABIOSA CAUCASICA, *Bieb.* THE CAUCASIAN SCABIOUS.

**SYNONYMS.**—*S. elegans*, *Ræm. et Schul.*; *S. connata*, *Horne*; *S. caucasica*, var. *elegans*, *Dec.*

**ENGRAVINGS.**—Bot. Mag. t. 836; and our *fig. 1*, in Plate 42.

**SPECIFIC CHARACTER.**—Radical leaves lanceolate, acuminate, quite entire, glaucous; involucrum very villous; corollas 5-cleft, radiant; base of involucels elongated, longer than the ovate foveolæ; crown of seeds short, 25-nerved; limb of calyx sessile, with exserted bristles. (*G. Don.*)

**DESCRIPTION, &c.**—This very handsome species has a tall, erect stem, with a large head of beautiful blue florets in the ray, and whitish florets in the disk, the styles and stamens of which are of a bright pink. The leaves are broad and somewhat silvery. The species is a hardy perennial, flowering in July and August. It is a native of Mount Caucasus, whence it was introduced in 1803.

### 2.—SCABIOSA GRAMINIFOLIA, *Lin.* THE GRASS-LEAVED SCABIOUS.

**SYNONYM.**—*S. argentea angustifolia*, *Bauh.*

**ENGRAVINGS.**—Bot. Reg. t. 835; and our *fig. 3*, in Plate 42.

**SPECIFIC CHARACTER.**—Suffruticose at the base; leaves linear, lanceolate, quite entire, of a silvery white; corollas 5-cleft, radiant, base of

involucels elongated, equal in length to the linear foveolæ; crown of seed, spreading, 24-nerved; limb of calyx pedunculated; bristles of calyx 5, equal in length to the crown. (*G. Don.*)

**DESCRIPTION, &c.**—The flowers are of a light purple; those of the ray are not so numerous as in *S. caucasica*, and they are the same colour as those of the disk. The stamens and pistils are also of the same colour. The leaves are narrow, of a sea-green, and covered with a white silky down. The species is a native of the mountains of Europe, whence it was introduced in 1833. It is quite hardy.

### 3.—SCABIOSA ATROPURPUREA, *Lin.* THE DARK PURPLE, OR COMMON SWEET SCABIOUS.

**SYNONYMS.**—*S. peregrina*, *Bauh.*; *S. indica*, *Clus.*; Red-flowered Indian Scabious.

**ENGRAVINGS.**—Bot. Mag. t. 247; and our *fig. 2* in Plate 42.

**SPECIFIC CHARACTER.**—Stem branched; radical leaves lanceolate,

ovate, lyrate, coarsely-toothed; caudine leaves pinnate-parted, with oblong, toothed, or cut lobes; heads ovate while bearing the fruit; corollas radiant, a little longer than the involucre. (*G. Don.*)

**DESCRIPTION, &c.**—This plant is well known in British gardens, under the denomination of the Sweet Scabious, from its honey-like smell. Its flowers are produced from June to October. It varies considerably in

colour from a dark purple to pink, and even white. It is said to be a native of the East Indies, but it was sent here from Spain before 1629. It is a biennial, and new plants should be raised every year from seed sown in May, and transplanted in autumn to flower the following year.

#### OTHER SPECIES OF SCABIOUS.

These are very numerous; but they are so rarely seen in British gardens, that it is only necessary to describe two or three of the most common.

*S. WEBBIANA, D. Don, Bot. Reg. t. 717.*

A small-flowered plant, of no beauty; a native of Mount Ida, introduced in 1819.

*S. SUCCISA, Lin.*

A British plant, called the Devil's Bit, from the singular appearance of its main root, which looks as though the end had been bitten off.

*S. OCHROLEUCA, Dec.*

A well-known and very handsome garden species, with cream-coloured flowers; a native of Germany, introduced in 1597.

### CHAPTER XXVI.

#### COMPOSITÆ.

**CHARACTER OF THE ORDER.**—Limb of calyx wanting or membranaceous, or divided into bristles, paleæ, or hairs. Corolla five-toothed or five-lobed, tubular, ligulate, or bilabiate, inserted on the top of the ovary. Stamens five, distinct, perigynous. Anthers combined, seldom free. Ovary adhering to the tube of the calyx, one-celled,

one-seeded. Style one. Stigmas two. Fruit an achene crowned by the limb of the calyx. Albumen none. Usually herbs, rarely shrubs. Leaves exstipulate. Flowers disposed in heads on a receptacle, or surrounded by an involucrum, the scales of which are sometimes mixed with the flowers, and are then called paleæ. (*G. Don.*)

**DESCRIPTION, &c.**—The Compositæ are so natural an order, that any person who has seen a daisy will know the greater part of them at first sight; that is to say, all that have the florets of the ray ligulate, and those of the disk tubular. The thistle-headed plants form another easily-recognised section, as their florets are all tubular; and the succory-headed plants, the florets of which are all ligulate, form another division. The Compositæ are generally free-growing, hardy plants, which require very little culture.

#### GENUS I.

#### ASTER, *Lin.* THE ASTER, OR STARWORT.

*Lin. Syst. SYNGENESIA SUPERFLUA.*

**GENERIC CHARACTER.**—Flowers of ray ligulate, female; those of | volucral scales in three or four series; spreading and ciliated. Fruit the disk hermaphrodite, tubular. Receptacle rather convex. In- | obovate, compressed. Pappus double, deciduous.

**DESCRIPTION, &c.**—The small-flowered perennial plants included in this genus are well known as Michaelmas Daisies, and as giving a lively appearance to the flower-garden in autumn. The genus Aster is a very extensive one; and though modern botanists have made nearly twenty new genera out of it, they have still left a hundred species remaining in it. Nearly all the species are very ornamental, and well deserving of cultivation in a flower-garden.

1.—ASTER ALPINUS, *Lin.* THE ALPINE ASTER, OR STARWORT.SYNONYME.—*A. montanus*, *Bauh.*

ENGRAVING.—Bot. Mag. t. 199; and our fig. 2 in Plate 43.

SPECIFIC CHARACTER.—Leaves subpathulate, hairy, entire. Stem simple, one-flowered.

DESCRIPTION, &c.—This very pretty little plant does not grow more than six inches high on its native mountains, and even in gardens does not exceed the height of six or eight inches. Its flowers are large and showy, the disk being yellow and the ray purple. It should be grown in moist, stiff soil, and if planted on rockwork, it should be frequently watered. It is a native of the Alps of Austria and Switzerland, whence it was introduced in 1658. It flowers in May and June, continuing in blossom a month or six weeks. It is very well adapted for the beds in a geometrical garden, from the dwarfness of the plants and the large size and showy colours of the flowers.

2.—ASTER AMELLUS, *Lin.* THE ITALIAN MICHAELMAS DAISY.SYNONYMS.—*A. vulgaris*, *Bauh.*; *A. atticus*, *Dod.*

ENGRAVINGS.—Bot. Reg. t. 340; and our fig. 1 in Plate 43.

SPECIFIC CHARACTER.—Leaves oblong-lanceolate, entire, scabrous. Branches corymbose. Calyx imbricated, subsquamose.

DESCRIPTION, &c.—This very handsome species has been supposed to be the Amellus of Virgil, as it is a native of Italy and other parts of the south of Europe, where it grows wild in meadows. In England it is a hardy perennial plant, flowering from August to September. It was introduced before 1596, and was one of the plants grown by Gerard in his garden in Holborn, then a suburb of London.

## OTHER SPECIES OF ASTER.

- All the numerous species of Aster bear so very strong a resemblance to each other that I have not thought it necessary to describe them in detail, but will merely mention a few of the most ornamental species below.

A. NOVÆ ANGLIÆ, *Lin.*; *Bot. Reg.* 183.

This very showy species is remarkable for the rich dark purple of the florets of the ray, all of which bend downwards. The stem, footstalks, and the tip of the bracts are all pink, and there is a variety which has the ray pink also. It is a native of North America, whence it was introduced in 1710.

A. GRANDIFLORUS, *Lin.*; *Bot. Mag.* t. 273.

As the last-mentioned Aster was the first species introduced from North America, this was probably the second, as it was sent home by Catesby in 1720. Since that period, more than sixty American species have been described and introduced. It is a hardy, tall-growing plant, but badly named, as the flowers are by no means large.

A. SALSUGINOSUS, *Rich.*, *Bot. Mag.* t. 2942.

A handsome species, not branched, and with single flowers. It is a native of the salt plains of the Athabasca, in North America, where it was found by Dr. Richardson, during his journey with Captain Franklin, in search of the North-west Passage. It was introduced in 1828, and it flowers in May.

A. SPECTABILIS, *Ait.*; A. ELEGANS, *Willd.*; *Bot. Reg.* t. 1527.

A very handsome species; a true Michaelmas Daisy, with the flowers in corymbs, and appearing in September and October. A native of North America, introduced in 1777.

A. PATENS, *Swt. Brit. Flw. Gard.* t. 234.

A rather small-flowered, and not very handsome, American species; introduced in 1773.

A. CORDIFOLIUS, *Nees.*

A very small-flowered species ; a native of North America, flowering in September ; introduced in 1759.

A. PALLENS, *Willd.*; *Bot. Reg.* t. 1509.

A very handsome Michaelmas Daisy, with small but showy flowers. A native of North America ; introduced in 1775.

A. CÆSPITOSUS, *Hort.*; *Bot. Reg.* t. 1571.

A dwarf compact plant, with pale lilac flowers. A native of North America, flowering in September. The year of introduction is not known.

A. EMINENS, *Nees.*; A. JUNCEUS, *Ait.*; A. LONGIFOLIUS, *Lam.*; A. MUTABILIS, *Hort.*; A. LÆVIGATUS, *Pursh.*; A. SALICIFOLIUS, *Hort.*; *Bot. Reg.* t. 1614.

This very handsome plant, which is known by so many names, is easily distinguished by its long elegant leaves, which curve and droop gracefully, in a feathery manner, on each side. It grows five or six feet high, and bears, towards the latter end of September, a profusion of bright lilac flowers. It was introduced in 1798, from North America ; and it is quite hardy in British gardens.

A. ALBUS, *Hort.*; A. LONGIFOLIUS, var. VIRGINICUS, *Lam.*; A. VIRGINICUS, *Nees.*; A. EMINENS, var. VIRGINEUS, *Lindl.* *Bot. Reg.* t. 1656.

An American species, with broad leaves and white flowers ; frequently growing six or seven feet high. Introduced in 1826.

A. ACUMINATUS, *Michx.*; DIPLOSTEPHİUM ACUMINATUM, *Dec.*; *Bot. Mag.* t. 2707.

An American species, with broad pointed leaves, and small white flowers. Introduced in 1807.

A. CORDIFOLIUS, *Lin.*; *Bot. Reg.* t. 1597.

A North American species, with heart-shaped leaves and small pale flowers. Introduced in 1800.

A. CONCINNUS, *Willd.*; *Bot. Reg.* t. 1619.

A very neat plant, growing about three feet high, and covered with clusters of small neat flowers which appear in September and October. It was introduced in 1800.

A. LÆVIGATUS, *Willd.*; *Bot. Mag.* t. 2995.

A singular-looking plant, from the length and narrowness of the florets of the ray, which grow widely apart in a star-like manner. The leaves are broad, and winged down the petiole. The species is a native of North America, whence it was introduced in 1794.

A. CORIDIFOLIUS, *Michx.*; *Bot. Reg.* t. 1487.

A very curious-looking plant, with very small leaves and very small flowers, growing near New York, whence it was introduced in 1822. It does not flower till October.

A. CYANEUS, *Hoff.*; *Bot. Reg.* t. 1495.

An American species, with glaucous leaves and blue flowers. Introduced in 1789.

A. LÆVIS, *Lin.*; *Bot. Reg.* t. 1500.

Nearly allied to the preceding species, but with very green leaves and very pale blue flowers. Introduced from America in 1753.

A. FRAGILIS, *Willd.*; *Bot. Reg.* t. 1337.

An American species, of no beauty ; introduced in 1800.









*A. AMYGDALINUS*, *Lam.*; *A. UMBELLATUS*, *Alt.*; *DIPLOSTEPHİUM AMYGDALINUM*, *Dec.*; *CHRYSOPIS UMBELLATUM*, *Nees.*; *Bot. Reg.* t. 1517.

A very handsome plant, with white flowers growing in a compact head. It is a native of North America, whence it was introduced in 1699. It grows about six feet high, and flowers in September.

*A. CORYMBOSA*, *Alt.*; *A. CORDIFOLIUS*, *Micrh.*; *EURYBIA CORYMBOSA*, *Nees.*; *BIOTTIA CORYMBOSA*, *Dec.*

The flowers are white, with a large yellow disk, and are produced in loose corymbs. A dwarf American species, introduced in 1765.

*A. PUNCTATUS*, *Wald. et Kit.*; *A. DESERTORUM*, *Fisch.*; *A. ACRIS*, *Lin.*; *A. HYSSOPIFOLIUS*, *Cav.*; *GALATILLA PUNCTATA*, *Nees.*; *G. INTERMEDIA*, *Cass.*

A native of the salt marshes of Hungary, &c., whence it was introduced in 1683. It grows a compact bush about two feet high, and flowers in July. The florets of the ray are long and recurved, and their purple hue forms a fine contrast with the golden yellow projecting stamens.

### GENUS II.

#### *DILOPAPPUS*, *Cass.* THE DILOPAPPUS.

*Lin. Syst.* SYNGENESIA POLYGAMIA SUPERFLUA.

**GENERIC CHARACTER.**—The ray flowers in one series, feminine. Disk hermaphrodite. Pappus in two series. Corollas of the disk flowers regular. Achernium rough.

• **DESCRIPTION, &c.**—This genus has been separated from the genus *Aster*, on account of the pappus being in two rows; and hence the name, which signifies Double-pappus. Most of the species are greenhouse shrubs.

#### 1.—*DILOPAPPUS INCANUS*, *Lindl.* THE HOARY CALIFORNIAN ASTER.

**ENGRAVINGS.**—*Bot. Reg.* t. 1693; and our *fig.* 6, in Plate 43. **SPECIFIC CHARACTER.**—Suffruticose. Leaves linear, obtuse, glau-

ously hairy, somewhat stem-clasping. Stem corybose; branches one-flowered. Involucle squarrose.

**DESCRIPTION, &c.**—This very handsome plant is a native of California; introduced in 1832. Like all the Californians, it requires a dry, open situation, and is killed by much wet. It was at first supposed tender, but it is now found to be more injured by wet than frost.

### GENUS III.

#### *ERIGERON*, *Willd.* THE FLEABANE.

*Lin. Syst.* SYNGENESIA SUPERFLUA.

**GENERIC CHARACTER.**—Involucre imbricated. Receptacle naked. Florets of the ray very narrow. Pappus hairy; hairs rough.

**DESCRIPTION, &c.**—This genus contains several British plants which, under the name of Fleabane, are well known to persons residing in the country; and which were formerly in much repute, as their smell, when dried, was supposed to drive away fleas, and other noxious insects. The British species have no beauty to recommend them; but some of the American species are well deserving of cultivation. The generic name of *Erigeron* is said to be derived from the Greek, and to signify To-grow-old-soon; but this name does not appear very applicable, as some of the flowers are remarkable for the long time they continue in perfection.

1.—*ERIGERON SPECIOSA*, *Dec.* THE SHOWY FLEABANE.

**SYNONYM.**—*Stenactis speciosa*, *Lindl.*

**ENGRAVINGS.**—Bot. Reg. t. 1577; and our *fig.* 4, in Plate 43, under the name of *Stenactis speciosa*.

**SPECIFIC CHARACTER.**—Stem erect, corymbose at the apex, and

many-flowered, glabrous. Leaves ciliated, acute, entire; radical ones spatulate, caudine ones ovate-lanceolate, slightly stem-clasping. Florets of the ray twice as long as the involucle.

**DESCRIPTION, &c.**—This splendid plant is sometimes grown as an annual, because, when raised from seeds, the plants will flower the first year. It is, however, a true perennial, as it will live an indefinite number of years under favourable circumstances, and it may be propagated by dividing the root. It is a native of California, whence it was introduced in 1830. It is generally propagated by seeds, which are sold in the seed-shops under the name of *Stenactis speciosa*, the name given to the plant by Dr. Lindley.

2.—*ERIGERON GLABELLUM*, *Nutt.* SMOOTH-LEAVED FLEABANE.

**ENGRAVINGS.**—Bot. Mag. t. 2923; and our *fig.* 4 in Plate 43.

**SPECIFIC CHARACTER.**—Leaves lanceolate, entire, smooth, ciliated; radical ones subspatulate, nerved. Stem and involucro pubescent.

Flowers subcorymbose. Florets of the disk numerous, linear and extremely narrow.

**DESCRIPTION, &c.**—This plant, though very inferior in beauty to the preceding species, is yet useful in a flower-garden, from its flowers appearing in autumn, and remaining till Christmas. Dr. Richardson found it between the latitudes 54° and 64° North; and Nuttall discovered it in the plains of the Missouri. It was introduced in 1827.

## OTHER SPECIES OF ERIGERON.

*E. BELLIDIFOLIUM*, *Pursh.*; *E. PULCHELLUM*, *Michx.*; *Bot. Mag.* t. 2402.

This is a very handsome species, with pale bluish-lilac flowers, and broad radical or root leaves. It is a native of North America, where it is called Poor Robin's Plantain. It was introduced in 1790.

*E. PULCHELLUM*, *Dec.*; *ASTER ALWARTENSIS*, *Lodd.*; *Bot. Mag.* t. 2321.

A very showy dwarf, with large, broad, radical leaves, and flowers resembling those of *E. speciosa*, but having the florets of the ray of a bright rose colour. It was introduced in 1807, by seeds sent from Moscow, as it is a native of Caucasus; but it was soon lost, and is not now in the country.

*E. VILLARSII*, *Dec.*; *Bot. Reg.* t. 583.

A native of Piedmont, with small purple flowers; introduced in 1804.

## GENUS IV.

LEPTOSTELMA, *D. Don.* THE MEXICAN DAISY.

*Lin. Syst.* SYNGENESIA POLYGAMIA SUPERFLUA.

**GENERIC CHARACTER.**—Involucro equal, hemispherical. Receptacle chaffy. Florets of ray feminine, and of the disk hermaphrodite. Pappus hairy, hairs long and fine.

**DESCRIPTION, &c.**—This plant was separated from the genus Erigeron by the late Professor Don, on account of its chaffy receptacle, the receptacle in Erigeron being naked. The name of Leptostelma signifies "slender crown," in allusion to the length and delicacy of the hairs of the pappus.

## 1.—LEPTOSTELMA MAXIMA, D. Don. THE GREAT MEXICAN DAISY.

SYNONYME.—*Erigeron maximum*, Otto.

ENGRAVINGS.—Swt. Brit. Flow. Gard., 2d ser. t. 38; and our fig. 5 in Plate 43.

SPECIFIC CHARACTER.—Stem erect, fistulose, branching at the apex. Leaves stem-clasping, dentately serrated. Flowers terminal, corymbose.

DESCRIPTION, &c.—This very showy plant grows seven feet high, and makes a magnificent appearance when covered with its large panicles of flowers, which appear from the beginning of September to the end of November. In severe winters it requires a slight protection. It is a native of Mexico, whence it was introduced in 1828.

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## GENUS V.

## BELLIUM, Lin. THE LESSER DAISY.

*Lin. Syst.* SYNGENESIA POLYGAMIA SUPERFLUA.

GENERIC CHARACTER.—Involucrum many-leaved, in two series. Receptacle conical, naked. Florets of the ray feminine, and those of the paleaceous, double.

DESCRIPTION, &c.—The three species contained in this genus bear so much resemblance to those belonging to the genus *Bellis*, the Daisy, that the name of *Bellium*, or Daisy-like, has been given to them. They have been separated from *Bellis* on account of their chaffy pappus. They are all hardy perennials, natives of Europe.

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## 1.—BELLIUM BELLINOIDES, Lin. THE COMMON LESSER DAISY.

SYNONYMS.—*Bellis droserifolia*, Gowan; *B. maritima*, Bocc.

ENGRAVINGS.—Swt. Brit. Flow. Gard., 2d ser. t. 175; and our fig. 7 in Plate 43.

SPECIFIC CHARACTER.—Leaves spatulate, entire. Florets of the disk four-toothed, and with four stamens. Stigmata lanceolate-acute. Pala of the pappus truncate.

DESCRIPTION, &c.—This very pretty little plant is a native of Corsica and the Balearic Isles, in dry maritime pastures, where it grows in dense tufts, sending up its flower-stalks early in May, and continuing in flower all the summer. It is quite hardy in dry situations, but it is easily killed by wet.

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## OTHER SPECIES OF BELLIUM.

There are only two other species of *Bellium*, viz. *B. minutum*, a dwarf plant with white flowers, a native of the Levant, introduced in 1772; and *B. crassifolium*, so named from its thick, fleshy leaves, also with white flowers. This last species is a native of Sardinia, introduced in 1832; and it is figured in Sweet's *British Flower-Garden*, second series, t. 278.

## GENUS VI.

## INULA, Lin. THE ELECAMPANE.

*Lin. Syst.* SYNGENESIA SUPERFLUA.

GENERIC CHARACTER.—Involucrum imbricated, the scales spreading, more or less leafy, especially the outer ones. Receptacle naked. Anthers with two bristles at the base. Pappus simple. (Smith.)

DESCRIPTION, &c.—All the species of this genus have showy yellow flowers; but they are seldom grown in gardens on account of their rough coarse foliage. The name of *Inula* is supposed to be a corruption of *Helenium*, and the latter name to be derived from Helen, in allusion to the beauty of Helen, and the cosmetic properties

attributed to Elecampane, the plant to which the name was originally applied. All the species are said to possess medicinal qualities, and the common Elecampane is highly aromatic. There are many species, but only one is common in gardens.

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1.—*INULA GLANDULOSA*, *Bieb.* THE GLANDULOUS ELECAMPANE.

**SYNONYMES.**—*I. orientalis*, *Lam.*; *I. grandiflora*, *Willd.*; *Aster orientalis*, *Tourn.*

**ENGRAVINGS.**—*Bot. Mag.* t. 1907; and our fig. 2, in Plate 44.

**SPECIFIC CHARACTER.**—Leaves sessile, oblong, obsoletely serrated, serratures glandulose. Stem hairy, one-flowered. Calyxine scales lanceolate, billose.

**DESCRIPTION, &c.**—This species has large Golden-yellow flowers, which have a star-like appearance from the long, curved florets of the ray. The leaves are also remarkable, particularly those of the stem, for being set round the margin with dark brown or black spots, which are the glands from which the species takes its name. These glands are, however, wanting in the root-leaves. The species is a native of Georgia and Mount Caucasus, whence it was introduced in 1804. It is propagated by dividing the roots, or by seeds which ripen freely.

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GENUS VII.

*TELEKA, Less.* THE TELEKIA.

*Lin. Syst.* SYNGENESIA SUPERFLUA.

**GENERIC CHARACTER.**—Florets of the ray in one series. Achenium linear, elongated, many-sided. Pappus dentated, and crown-shaped. Subcartilaginous, and uniform.

**DESCRIPTION, &c.**—Showy plants, natives of Europe. The origin of the name is not known.

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1.—*TELEKIA SPECIOSA*, *Less.* THE SHOWY TELEKIA.

**SYNONYMES.**—*Molpadia suaveolens*, *Cass.*; *Buphthalmum speciosum*, *Schreb.*; *B. cordifolium*, *Waldst et Kit.*; *Inula Caucasicus*, *Pers.*; *I. macrophylla*, *Bieb.*

**ENGRAVINGS.**—*Bot. Mag.* t. 3466; and our fig. 1, in Plate 44.

**DESCRIPTION, &c.**—This magnificent plant generally grows six or eight feet high, with most luxuriant foliage. The leaves, Sir W. J. Hooker tells us in the *Botanical Magazine*, are “often a foot in length,” and proportionately broad. The flowers are very large, and of a golden-yellow. It is a native of the provinces near the Black Sea, whence it was introduced in 1739. It is quite hardy, and will flower in any common garden soil. It flowers in July and August; and it is propagated by seeds or division of the root.

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GENUS VIII.

*SILPHIUM, Lin.* THE SILPHIUM.

*Lin. Syst.* SYNGENESIA NECESSARIA.

**GENERIC CHARACTER.**—Receptacle chaffy. Pappus two-cleft. Involucre squarrose.

**DESCRIPTION, &c.**—The derivation of the name of this genus is not known with certainty. The species have all yellow flowers, and they are all natives of America.

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1.—*SILPHIUM TRIFOLIATUM*, *Lin.* THE TRIFOLIATE SILPHIUM.

**SYNONYM.**—*S. tenuifolium*, *Michx.*

**ENGRAVINGS.**—*Bot. Mag.* t. 3355, and our fig. 3 in Plate 44.

**SPECIFIC CHARACTER.**—Stem angular, glabrous. Leaves broadly

lanceolate, spreading, and three or four disposed in a whorl round the stem. Panicle branched.

**DESCRIPTION, &c.**—A native of the southern states of North America, whence it was introduced in 1755.









The stem is five or six feet high, and the flowers, which somewhat resemble those of the perennial sunflower, appear in July and August. The species is quite hardy.

S. PERFOLIATA, *Lin.*; Bot. Mag. t. 3354.

This species differs chiefly in the leaves, which are not verticillate, but grow two together embracing the stem. It is also a native of the southern states of North America, and was introduced in 1766.

GENUS IX.

RUDBECKIA, *Lin.* THE RUDBECKIA.

*Lin. Syst. SYNGENESIA FRUSTRANEA.*

GENERIC CHARACTER.—Florets of the ray neuter. Involucle many-leaved, scales in nearly equal series, spreading. Achenium angular, crowned with a four-toothed pappus. Receptacle chaffy, conical.

DESCRIPTION, &c.—This well-known genus was named in honour of the celebrated Swedish botanist Rudbeck, who was the predecessor of Linnæus in the professor's chair at Upsal. All the species are very handsome, and they are all distinguished by the projecting conical receptacle. Several new genera have been formed out of the Linnæan genus Rudbeckia, but I have only adopted one, viz. Echinacea, which embraces all the purple-flowered kinds; and I have retained all the yellow-flowered species in the old genus.

1.—RUDBECKIA TRILOBA, *Lin.* THE THREE-LOBED RUDBECKIA.

|                                                                                              |                                                                                                       |
|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| SYNONYMS.— <i>Centrocarpa aristata</i> , <i>D. Don.</i> ; <i>R. aristata</i> , <i>Sol.</i> ; | SPECIFIC CHARACTER.—Plant hairy. Lower leaves three-parted; upper ones undivided, broadly lanceolate. |
| * <i>R. subtomentosa</i> , <i>Pursh.</i>                                                     |                                                                                                       |

ENGRAVINGS.—Bot. Reg. t. 525; and our fig. 6, in Plate 44.

DESCRIPTION, &c.—This species is remarkable for the number of florets which it has in its ray, being only eight, and for the distance they are apart from each other. It is a native of Carolina, whence it was introduced before 1699, and it is quite hardy in British gardens, only requiring to grow in tolerably good soil. It is propagated either by division of the root, or by seeds.

2.—RUDBECKIA PINNATA, *Lin.* THE PINNATED RUDBECKIA.

|                                                                                 |                                                                                       |
|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| SYNONYM.— <i>Obeliscaria pinnata</i> , <i>Dec.</i>                              | leaves pinnate; stem leaves lobate or ternate, undivided at the apex.                 |
| ENGRAVINGS.— <i>Swt. Brit. Flow. Gard.</i> t. 146; and our fig. 5, in Plate 44. | Leaflets lanceolate, acute, subserrated. Receptacle elongated, chaffy. Pappus entire. |

SPECIFIC CHARACTER.—Stem furrowed, hispidly pubescent. Radical

DESCRIPTION, &c.—This species has also only eight florets in the ray, but the florets are broad and toothed at the tip. The receptacle is elongated and chaffy, the chaff enclosing the seed. The plant grows about five feet high, and is very handsome. It is quite hardy in dry soil, but is easily killed by too much moisture. It is increased by dividing the root, as the seeds seldom ripen. It is a native of Carolina, and was introduced in 1803. It flowers from June to October.

3.—RUDBECKIA COLUMNARIS, *Pursh.* THE COLUMN-BEARING RUDBECKIA.

|                                                                                                                                                                                                                 |                                                                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| SYNONYMS.— <i>R. columnifera</i> , <i>Fras.</i> ; <i>R. Tagetes</i> , <i>James</i> ; <i>Ratibida columnaris</i> , <i>D. Don</i> ; <i>R. sulcata</i> , <i>Raf.</i> ; <i>Obeliscaria columnaris</i> , <i>Dec.</i> | t. 361; and our fig. 4, in Plate 44, under the name of <i>Ratibida columnaris</i> . |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|

ENGRAVINGS.—Bot. Mag. t. 1601; *Swt. Brit. Flow. Gard.* 2d. ser.

DESCRIPTION, &c.—The stem and leaves are of a grayish green, and rough with short bristly hairs. The stem

is two or three feet high, wiry, angular, and furrowed; and though slender, it is perfectly erect from its rigidity. The leaves of the variety are distantly alternate, and deeply pinnatifid; the florets are generally only five in number, but they are very broad and handsome. In the species there are generally eight florets. Professor Don made this species a separate genus under the name of *Ratibida*, from the seeds having a slight fringe-like membrane, and the pappus being in the form of a short ciliated crown. The flowers are sweet-scented, and they appear in August and September. Both the species and variety are quite hardy, and they are propagated by dividing the root, as the seeds which are found among the chaff of the conical receptacle seldom ripen thoroughly, on account of the late appearance of the flowers.

#### OTHER SPECIES OF RUDBECKIA.

*R. HIRTA*, *Swt.*; *CENTROCARPHA HIRTA*, *D. Don*; *Swt. Brit. Flow. Gard.* t. 82.

The flowers have a yellow ray, and a deep purple disk. The florets of the ray are very numerous, but smaller than those of the other species. The plant is called a biennial, but it frequently lasts four or five years, but it is very apt to die off suddenly in wet winters. It is a native of North America, growing on the mountains, and flowering from July to September. It is a compact little plant, rarely growing more than a foot high, and it is propagated either by dividing the root, or by seeds, which it ripens freely.

*R. NUDICAULIS*, *Nutt.*; *CENTROCARPHA GRANDIFLORA*, *D. Don*; *Swt. Brit. Flow. Gard.* 2d ser. t. 87.

A very showy species, with large yellow flowers. The florets of the ray are very numerous and hang loosely down. The petioles of the leaves are six or eight inches long. A native of North America; introduced in 1830.

There are several other species, but the others are less ornamental.

#### GENUS X.

#### ECHINACEA, *Mench.* THE PURPLE RUDBECKIA.

*Lin. Syst.* SYNGENESIA FRUSTRANEA.

**GENERIC CHARACTER.**—Involucro many-leaved in several rows, abruptly dilated. Stigmata elongated, acuminate, recurved, and squamose. Receptacle conical, chaffy; chaff acuminate, rigid, deciduous. Florets of the ray ligulate, neuter; those of the disk hermaphrodite, funnel-shaped, five-toothed, tube very short, mouth

abruptly dilated. Stigmata elongated, acuminate, recurved, and papillose hispid. Achene quadrangular, with a membranaceous crown, lacunulated, bristly.

**DESCRIPTION, &c.**—This genus was first proposed by Mœnch, and it was adopted by Cassine, and it is chiefly distinguished by the structure of its pappus, and by the shorter tube of the florets of the disk. The name of Echinacea is from *Echinos*, a hedge-hog, in allusion to the thorniness of the involucro. This genus comprises all the Rudbeckias which have purple flowers.

#### 1.—ECHINACEA PURPUREA, *Dec.* THE COMMON PURPLE RUDBECKIA.

**SYNONYMS.**—*Rudbeckia purpurea*, *Lin.*; *Dracunculus Virginianus*, *Moris.*

**SPECIFIC CHARACTER.**—Leaves lanceolate-ovate, alternate, entire. Florets of the ray bifid.

**CHARACTER.**—Bot. Mag. t. 2; and our *fig.* 1, in Plate 45.

**DESCRIPTION, &c.**—This species is easily distinguished by the great length of the florets of the ray, which are pendulous and recurved at the point. It is a native of Carolina and Virginia, whence it was introduced in









1699. It is generally considered hardy, but in severe winters it is frequently killed, if not covered with a slight protection. It flowers in July; but as it rarely ripens seeds in this country, it is propagated by dividing the root; but this operation should be performed in spring, as the parent-plant is generally killed if the root be divided in autumn. The young plants also succeed better when taken off in spring.

## 2.—*ECHINACEA SEROTINA*, *Dec.* THE LATE-FLOWERING PURPLE RUDBECKIA.

**SYNONYMES.**—*Rudbeckia serotina*, *Lin.*; *R. purpurea*, *var. serotina*, *Nutt.*; *R. speciosa*, *Link.*

**ENGRAVINGS.**—*Swt. Brit. Flow. Gard.* t. 4; and our *fig. 4*, in Plate 45.

**DESCRIPTION, &c.**—This species has been very justly called a stately plant, as it grows about five feet high, spreading widely, with broad leaves, and very large, showy flowers. It is a native of North America, whence it was introduced in 1816. It begins flowering in July, and continues producing a succession of blossoms till November. It ripens seeds freely, and may be increased either by them, or by dividing the roots. It is quite hardy in British gardens, and will grow well in any common garden-soil, but it thrives most when the soil is rich.

## 3.—*ECHINACEA HETEROPHYLLA*, *D. Don.* THE VARIOUS-LEAVED ECHINACEA.

**SYNONYMES.**—*Coreopsis heterophylla*, *Cav.*, *Simsia heterophylla*, *Pers.*; *Ximenesia Cavanillesii*, *Spreng.*; *Helianthus glutinosus*, *Sesse et Moc.*

**ENGRAVINGS.**—*Swt. Brit. Flow. Gard.*, 2d ser. t. 32; and our *fig. 2*, in Plate 45.

**SPECIFIC CHARACTER.**—Radical leaves fiddle-shaped. Palea membranaceous, longer than the florets.

**DESCRIPTION, &c.**—This species is a native of Mexico, whence it was sent to the Botanic Garden of Madrid in 1793; but being soon lost, it was not re-introduced till 1828. As it does not flower till October, it does not ripen its seeds, but it is propagated by dividing its large tuberous root. It is not quite hardy in British gardens, but it may be preserved by turning a flower-pot over it, or taking up its root like that of the dahlia. It will grow in any good garden soil. This species is easily known by the coarse, viscid hairs which cover its leaves and stem.

## 4.—*ECHINACEA DICKSONII*, *Lindl.* MR. DICKSON'S ECHINACEA

**ENGRAVINGS.**—*Bot. Reg.* for 1838, t. 27; and our *fig. 3*, in Plate 45. | and subdentate; cauline ones ovate-lanceolate. Palea shorter than the florets.

**SPECIFIC CHARACTER.**—Radical leaves fiddle-shaped, subtrilobate,

**DESCRIPTION, &c.**—This species is nearly allied to the last, but it has a pink ray, and the scales of the receptacle do not project beyond the florets of the disk. It grows about a foot high, and flowers from the beginning of August to the end of September. It has tuberous roots, like the dahlia, and it is generally propagated by them in the same manner, as it seldom ripens seeds in the open air.

## OTHER SPECIES OF ECHINACEA.

### *E. NAPIFOLIA*, *Dec.*; *RUDBECKIA NAPIFOLIA*, *Kunth.*

This is very nearly allied to the last; it has rose-coloured flowers, and is a native of Mexico, whence it was introduced in 1824.

## GENUS XI.

## CHRYSOSTEMMA, Less. THE GOLDEN CROWN.

*\*Linn. Syst. SYNGENESIA FRUSTANEA.*

*Chrysostemma*—Stems many-flowered, hairy-glaucous. Leaves at the top opposite, opposite. Petioles; those of the side leaves petiolate, middle ones sessile. Trifoliate in two rows, entire body,

terminal ones erect, oval-oblong, subcavous at the margin. Receptacles, petioles linear, very narrow or thread-like. Style branched, divided into different segments. Achene faintly compressed, oblique, slightly winged at the margin. Pappus crown-shaped, laciniate.

*Classification, &c.*—This genus contains only one species. The name of Chrysostemma is, literally, golden crown, in allusion to the colour of the flowers.

1.—**CHRYSOSTEMMA TRIPTERIS, Less. THE TRIPARTITE-LEAVED CHRYSOSTEMMA.**

*Synonym.*—*Coneoplis triptera, Linn.*

*Encyclopaedia.*—Bot. Mag. t. 3583; and our fig. 7 in Plate 44.

*Specific Character.*—Leaves opposite, subpedate, pinnatifid, upper ones dissected, segments entire.

*Description, &c.*—This plant was introduced into English gardens in 1737 from North America. It is a showy plant, growing five or six feet high, and producing abundance of flowers from August, till the stem is killed down to the ground by the frost. It is propagated by dividing the root.

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